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HONDURAN LABOR FORCE ASSESSMENT

Written by:

**Byron Battle
Carlos Chamorro
Anthony Dewees
Lemuel Johnson
Patrick Pellicane
Ramon Venegas**

**WPI, Inc.
Cambridge, Massachusetts**

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EXECUTIVE SUMMARY

HONDURAN LABOR FORCE ASSESSMENT

Summary

Several sectors in Honduras' economy offer important growth opportunities for the country, which, if properly managed, can contribute substantially to national income, export receipts, and employment expansion. A critical obstacle facing this development is the lack of appropriate manpower skills needed to realize the potential of these industries.

The sectors selected for examination were tourism, wood products, industrial maintenance, and residential construction. While each sector is distinct, each can play a pivotal role in the development of the Honduran economy.

Objectives of the Study

USAID's specific objective in the study was to target specific areas of intervention that can have the most positive impact. In particular, consideration is to be given to the creation of new vocational centers that address these sector-specific needs. However, the question remains what skills are in greatest need of development, how to mobilize both public and private resources to support training programs, and what should be the most effective institutional response.

To undertake this analysis, WPI, Inc, an international consulting firm headquartered in Cambridge, Massachusetts, assigned a team of economists, vocational specialists, and sectoral experts to undertake the study. The team of six consultants was asked to spend one month in Honduras and work with a group of 12 Honduran Peace Scholars. Prior to the arrival of the consultants, the Peace Scholars undertook extensive research of these sectors, their products, their use of labor, their obstacles, and their growth strategies. The output of the Peace Scholars' work was four reports on the products of these sectors, their production processes, markets, labor force, and technologies of these sectors.

The consulting team arrived in Honduras on August 15 and completed its work on September 17, 1994. The team worked in close collaboration with the Peace Scholars throughout the process so that the effort was a genuine Honduran-U.S. joint effort. The consultants' investigation focussed on examining the likely evolution of these industries given the right conditions, namely effective management strategies and an appropriately

skilled workforce. The joint team presented their findings to public sessions in Tegucigalpa and San Pedro Sula during the second week of September.

Principal Conclusions

As would be expected in a country of Honduras' level of development, the obstacles to rapid development of the four sectors are imposing. Two factors stand out:

- The management factor

Inertia seems to characterize Honduran managers who have been slow to develop longer-term growth strategies. Management strategies remain focussed on short-term return, with little emphasis given to the need (a) to adapt products to a fast changing competitive market, (b) to introduce new production techniques, and (c) to invest in human resources. Management in the four sectors has, in practice, been unsupportive of training efforts, preferring to make do with extremely cheap and unskilled labor rather than invest in human capital and enhanced productivity. The sum total of this inertia has been an economy which remains among the least dynamic in the western hemisphere.

- The labor factor

Honduras' workforce has an extremely low basic education level. The average Honduran leaves formal schooling during the fourth grade at age 10-11 to join the unskilled workforce with rudimentary literacy at best. The lack of sound basic education results in a labor force that is scarcely 'trainable' at the vocational level.

Honduras' Labor Market Reality

The state of the labor market bears testimony to the above. There appears to be a 'great divide' in the labor force, separating it into two distinct groups. Within the vast pool of undereducated people, there is relatively little wage differential between the functions performed by workers. The training of unskilled people at this level does not automatically lead to higher wages for the trained worker, thereby removing the personal incentive of the worker to develop new skills. Hence, the market demand for skills among workers is restricted.

For their part, employers continue to rely on unskilled, labor-intensive production and service methods, taking advantage of extremely low wages, while simultaneously deploring the lack of skills and work ethic on the part of workers. Employers, likewise, do not create a strong market demand for skills.

Above a certain level of education and training (high school plus specialized

vocational training), the labor market begins to work in a more classic fashion, permitting workers to better their situation and income as a result of learning new skills. Employers are quick to hire such people and pay them accordingly. The gulf between these workers and the pool of unskilled manpower is huge.

Therefore, the critical factor remains the state of basic education in Honduras, the trainability of the workforce, and the availability of appropriate vocational training—and the demand for it by management and workers alike. As yet, despite good enrollment in existing vocational educational programs, there is no indication of efforts to increase the supply for such programs to meet current market opportunities.

Sector Findings

- **The wood products industry**

Honduras is endowed with outstanding wood resources for the manufacture of furniture and other high quality household wood items, such as doors and paneling. It already has an accomplished artisan industry based on local woodworking skills which has deep roots in the Honduran culture.

High quality wood products are in strong demand in the North American market, a niche which Honduran manufacturers might well exploit. To realize this export potential, however, Honduran industry has to get on a higher growth path, one which requires sophisticated production techniques and excellent design and workmanship. The wood products industry is global and extremely competitive. Artisanal modes of production are not the future of this industry; they must be replaced by advanced wood treatment techniques, sophisticated machining, and state-of-the-art capital equipment.

The implications for the Honduran labor force are serious. Workers must be trainable in these techniques and be highly quality conscious. At a minimum, most workers must have finished high school and be capable of precision work involving computational skills and machining. Unfortunately, the average Honduran worker does not meet this trainability standard.

- **Industrial Maintenance**

Industrial maintenance is not a sector as such, but contains elements that can determine the success or failure of all other sectors. Maintenance is an abiding, serious problem in the Honduran economy. The country does not have the base to move to more automated, mechanized production without the existence of qualified people who can work not only in corrective maintenance (repairs) but equally importantly in preventive and predictive maintenance.

For a modern, industrializing economy, a body of workers who can perform these functions at high levels of competency is essential. These workers must be able to read technical manuals, solve mechanical and electrical problems, and adapt quickly to new machines, technologies, and processes. A strong level of reading, computational, and problem solving skills is required, beyond the level of the local auto mechanic. Most Honduran workers are simply not at this level and those individuals with higher mechanical and electrical training seek professions beyond the level of maintenance operations.

The dilemma facing the country is therefore how to fill this critical gap so that modern industry development can take place. Existing vocational institutions are not now training at the level needed, in large part because their trainees are beginning at a very low level.

- Tourism

Tourism presents a different problem than that of wood products and industrial maintenance. Tourism is a service industry whose product is 'customer satisfaction'. Tourism is an interactive industry involving contacts between foreign visitors and local Hondurans. The industry is based on satisfying the interests and tastes of these visitors, whether they be in restaurants and hotels, or served by tour guides, tour operators, or transportation services. If the service is not there, the product is a failure, and will not sell in the future.

In view of its potential, Honduras should well be able to match the performance of Costa Rica and Belize in terms of attracting North American and European travelers. The prime potential extends along the northern tier of the country, from the ruins of Copan in the interior along virtually all the north coast, including the Bay Islands.

More than any other industry at the present time, Honduran tourism is poised for take-off. The resources are in place, but the service sector is not at international standard. One of the key quality factors lacking is tourism personnel, particularly in the hotel and restaurant areas where most service takes place. The necessary 'customer service focus' exhibited by all successful tourist destinations remains underdeveloped in Honduras. Basic skills from cooks to waiters to mid-level supervisors are lacking.

The international tourism segment of the market (as opposed to local Honduran tourism) recognizes the need in principle but has taken little action to remedy it. Unlike wood products and industrial maintenance, the trainability issue is not as critical. Most tourism service jobs do not require a completed high school education and the workforce is in general more easily trained in this area. Discipline and a customer service outlook are however indispensable.

The unskilled nature of most of the workforce in this sector has generated a

situation where there is little differentiation among wage levels, regardless to level of training. As a result, the classic labor market mechanisms do not come fully into play, with high wages associated with higher levels of training. In short, training is not yet rewarded by the market, deterring employees from eagerly seeking new skills.

Similarly, employers have not fully grasped the critical importance of quality service to building up their industry. Most hoteliers appear content to hire two lowly-paid, unskilled workers to do the job of one skilled individual, despite the impression that unskilled service personnel inevitably make on the international guest accustomed to international standards.

Vocational education is not only essential in this area, but feasible using the current education level of most Hondurans. What appears lacking is the development of market demand for skills, both from employers and employees alike. International standards of hotel and restaurant service, if instituted, might well create demand among employers; wage incentives that reward training and skills development might well stimulate demand among employees.

- Residential Construction

The construction industry is highly cyclical and precarious. As a result, construction companies traditionally are job-shops that hire laborers when and as needed. A variety of techniques are used to avoid bringing on permanent, long-term employees (primarily through the sub-contracting process) in an industry that rises and falls erratically.

Therefore, by its nature, construction companies do not train their employees in the same manner that a more stable operation might. This is not to say that construction companies do not need skilled laborers; rather, these companies are not inclined to invest in a work force that is transient.

The above notwithstanding, Honduran construction companies have long been very low skilled operations that have been slow to adopt new building techniques and technologies that would greatly boost their productivity. This results in part from the extremely low wages of laborers, which induces construction companies to keep their operations labor-intensive and not invest in labor-saving construction techniques.

As a result, the skills required tend to be bricklaying, basic carpentry and steel handling, as well as foremen skills to supervise workers. The companies generally have not begun to move into new materials and technologies. To do so, (as will have to be done eventually to address Honduras' severe housing problem), new low-cost, high productivity building techniques will have to be adopted. The industry recognizes this, but traditional practices plus economic recession have combined to create broad inertia and a lack of movement toward change.

Recommended Actions

For Honduras to seize upon these economic growth opportunities, more than training of the workforce will be required. However, any effort to develop these four sectors, as well as other sectors, will surely fail without actions to train the workforce with proper skills. No rapidly developing country in the world has been able to achieve such objectives without heavy investments in manpower skills.

To leave this task for the government alone to solve will not suffice. The Honduran business community, for its own prosperity and ultimate survival, must become one of the locomotives of change. Honduran management must become the ultimate market not for workers but for skills. In turn, they must create the incentives for workers themselves to demand these skills, so as to improve their life-long economic situation.

Assuming that each of the four sectors is a pilot operation that might stimulate other sectors to follow suit, the leading firms in these sectors and their business associations should take the lead in mobilizing the resources to train labor with the skills that these businesses need. Despite broadbased criticism of the current system, the basic infrastructure for a reinvigorated vocational training system currently exists.

This report analyzes the strengths and weaknesses of the existing training networks, ranging from INFOP in the public sector and CADERH in the private sector to the several universities and technical schools that should be part of an integrated national system of training. A major conclusion is that each has a role to play in a segmented vocational training market. However, the combination of these institutions will vary according to sector and the skills required.

The consultants recommend that funding sources focus their efforts and resources to enhance and expand training institutions in which both industry and universities are involved. These new, or reorganized, training centers should be dispersed throughout the country--probably not in major population centers--and be dedicated to working with specific industry sectors, responding directly to their current and long-term development needs. Special attention should be paid to working with the underprivileged and the unemployed/ underemployed populations. Higher education institutions should furthermore be involved in the training of trainers for these institutions.

The Tourism Sector

At present, INFOP, particularly its operations in Tegucigalpa, addresses some of the needs of the hotel and restaurant sector. However, the training offered by INFOP is not at the level of international tourism standards. Nevertheless, INFOP's role in meeting the needs of locally oriented hotels and restaurants is important.

To help Honduras reach international tourism standards needed to push the industry forward, international donors should consider funding a center for training trainers primarily in the hotel and restaurant area, focussing on the new tourism development areas (including Copan, the North Coast, the Bay Islands and eco-tourism). This new "Tourism Development Training Center", preferably located in San Pedro Sula or La Ceiba so as to be close to the tourist population it will serve, should be governed by a Tourism Training Council, composed of the Center's management, the Hotel Association, and those universities involved in tourism management. The IHT should be an ex-officio member. The Center should have the following characteristics:

- International funding for the Center should be contingent on obtaining strong support from the Hotel Association and individual hotels, including:
 - financial support from hotels and restaurants by agreeing to pay for approved training courses; hotels may wish to consider transferring funds to the new center via tax credits available for their contributions to INFOP (using Article 25 provisions)
 - direct involvement of the Hotel Association in helping the Center establish training standards and a curriculum that meets international standards
 - agreement of the hotels to engage the Center to deliver a minimum number of courses in their establishment over the course of a year.
- The new Tourism Development Training Center should be structured financially so as to be able to pay tourism trainers wages that are at least competitive with what the hotels pay their employees for these activities
 - trainers should be trained to train on-site in the establishments funding the Center and its courses.
 - training should be of sufficiently long duration to be effective, possibly involving a series of week-long sessions at different intervals throughout the year so as to have sustained impact

- The Honduran Tourism Institute should play a key role in the success of the new Center in the following ways:
 - the IHT should proceed to establish a system of hotel classification for Honduras' hotels that is in line with international standards; an important set of criteria use for classifying hotels should be the level of training the hotel gives employees in all categories.
 - the IHT should transfer the tourism technical assistance it receives from foreign donors, such as Mexico, Spain, and other sources to the new Center as added assistance to the professional training of trainers.
- Universities should further develop their tourism management degree and technical programs so as to touch the management level.
 - Universities, such as UJCV and UNITEC, should be involved in the training of trainers for the Center.
 - Universities should work with National Tourism Training Center to develop training standards to be applied at all levels

The Wood Products Sector

To reach a rapid growth path, the wood products industry will require specialized training of qualified students that will enable the industry to produce products, such as furniture and home furnishings, that are at international standards. Training for this type of industry must go well beyond the basic carpentry courses currently offered and the artisanal production methods used in wood products in Honduras today.

Training therefore must be focussed on those skills inherent in a sophisticated furniture making operation, namely treatment and preservation of wood, design, machining, and finishing. These skills are not currently developed by any Honduran training institution.

- the new CADERH center should be designed to complement, not duplicate, what INFOP currently undertakes. This new "Wood Manufacturing Center" would be governed by a committee of CADERH and industry members.

- the Center should seek support from the wood products industry, in particular the leading furniture manufacturing companies as well as the Association of Wood Transformers.
 - members of the committee of the Center should actively participate in financing its operations and its training equipment (perhaps through in-kind contributions of new or used equipment); participating firms should consider transferring funds to the Center via the tax credit provisions of Article 25 establishing INFOP.
 - members of the committee should agree to recruit, where possible, trainees from the Center, as well as to send current employees to the Center for training; training conventions should be established with the Center.
 - participating companies should work with the Center to establish training standards as well as communicate specific skills needs to be integrated into curricula.
 - members of the committee should ensure that Center trainers are able to earn wages equivalent to what they could receive from industry; training costs to participants should be based on paying trainers equivalent salaries.
- International technical assistance should be sought to assist the Center to train trainers as well as to obtain additional equipment for training.
- To address the key issue of obtaining trainable people for the Center, USAID should integrate into its Basic Education and Skills Training project (BEST) courses which prepare students with adequate basic education for the curriculum which they would have to follow in the Wood Manufacturing Center program.

The Industrial Maintenance Sector

Similar to the wood products sector, the more sophisticated industrial maintenance skills needed for economic transformation in Honduras are not being met by current training programs. Required are programs which teach students to handle varied areas of corrective and preventive maintenance of increasingly complex mechanical and electrical equipment.

The issue of trainability of potential students is a critical issue. Honduras' low level of educational achievement does not produce adequately prepared students to undertake this type of training. Hence, basic education needs must be addressed as well over the long term in order to create a pool of trainable people.

- CADERH should orient part of its BEST program toward the preparation of students to enter industrial maintenance vocational education programs. "Track" curricula should be devised with the clear objective of training entrants to an industrial maintenance vocational program. These curricula should emphasize basic computational and mechanical problem solving skills.
- Training institutions should support the current United Nations Industrial Development Organization (UNIDO) initiatives in developing "industrial maintenance enterprises" for several reasons:
 - a successful model is already being developed
 - such enterprises constitute a demand for skills that can be marketed easily to industrial firms that need maintenance services
- CADERH should help training centers to assist candidates to enter enterprises as apprentices or assistants
- CADERH/ANDI should provide support for a joint program to prepare skills to address the needs of specific industries
- The Ministry of Education and training institutions should support a formal education program to develop higher level maintenance technicians to include one or two years of post-technical high school training

The Residential Construction Sector

The principal barrier facing the construction industry is its dependence on labor-intensive, low productivity construction methods, based on the use of abundant, low skilled, low paid labor. The industry's need for skilled workers will depend on the changes that it will make in building techniques, technologies, and equipment used.

At the level of skills currently demanded, INFOP's programs of basic carpentry, bricklaying, and steel handling appear to be at an adequate level, despite the needs for quality improvement. INFOP and CHICO should jointly manage these programs in the future to ensure that course curricula are meeting the needs of the industry and training standards are acceptable.

In terms of higher skills training, USAID should initiate discussions with CHICO to determine whether a construction industry training center would be warranted and whether the industry would both use the institution and support it financially. The industry would therefore be compelled to address the issue of its productivity and determine whether it is willing to invest in enhanced construction labor skills.

CHAPTER I. INTRODUCTION

Background and Objective of the Study

The United States Agency for International Development in Honduras is embarking on a program to encourage and enable Hondurans with low levels of basic education to develop the necessary basic skills not only to be trainable for more advanced skills but also to be trained in job-specific competencies that will enable them to obtain gainful employment.

This program, called the Basic Education and Skills Training Project (BEST) has two components. Component 1 is the Alternative Basic Education Delivery Systems (ABEDS) which is designed to offer out-of-school young people and adults the opportunity to strengthen and extend their basic education so that these individuals will be able ultimately to train for job-related skills. This program addresses the very serious problem in Honduras of a labor pool that has an average of four years of primary school, with a low level of literary and computational skills. USAID therefore seeks to address the issue of 'trainability' of the workforce in this component of the BEST program.

Component 2 is the Non-Formal Vocational Training (NVT) Program. In this aspect of the program, USAID intends to expand the network of private training centers within the private, not-for-profit program called CADERH. USAID is prepared to finance the creation of 15 new centers and strengthen the existing 15 centers.

In order to design its approach for the creation and support of 15 new CADERH centers, USAID determined that it would be necessary to assess more precisely the most critical needs of various sectors of the economy. As a pilot effort, the Agency chose four sectors known to be important not only in terms of employment, national income, and exports, but believed to be sectors with strong growth potential, given the right growth strategies, investments, and human resource skills.

Accordingly, the sectors of tourism, manufactured wood products, residential construction, and industrial maintenance were selected for intensive analysis. In an effort to conduct a joint Honduran-U.S. analysis, the Agency decided to engage two groups to undertake the study. The first was a group of Honduran Peace Scholars who were carefully selected, primarily from training institutions and universities, to undertake a thorough analysis of these four sectors. The 15 Peace Scholars were divided up into teams according to the four sectors and asked to research the products of these sectors, the sectors' organization, its growth potential and constraints, and the characteristics of its workforce, in particular the skill levels of its workers.

Following the completion of this analysis, the services of an international consulting firm in Cambridge, Massachusetts, WPI, Inc., were contracted to bring a team of six experts to Honduras for one month and work with the Peace Scholars to define a series of recommendations on how to respond to the manpower skills needs of the sectors under study

WPI, Inc. was asked to contract with experienced industry specialists in each of the four sectors, a labor economist, and a vocational education expert, to examine closely through a series of industry and training institution interviews the needs of these sectors for manpower skills in their current and future operations. The objective of the study was to derive the appropriate institutional response to these needs and recommend a plan of action for USAID-Honduras to follow.

Methodology of the Study

The WPI team arrived in Honduras on August 15, 1994 and completed its field work on September 17, 1994. The external consultants had the advantage of four well-researched sector studies previously completed by the Peace Scholars.

The consultants and the four Peace Scholar teams immediately set up an intensive interview schedule, focussing not only on companies and institutions in the four sectors, but also on training institutions, government agencies, private and public universities, business associations, other donor agencies, and well-informed observers.

The thrust of these interviews, building on knowledge of the sector obtained by the Peace Scholars, was to gain a perspective of the possible future growth perspective of the four sectors if the proper resources and manpower skills were available. The consultant team sought to understand the underlying dynamics of the sector, its opportunities based on its comparative advantages in the Central American region, and its principal constraints.

The focus was by definition primarily on workforce skills requirements and deficiencies, while fully realizing that many other factors are needed for growth and competitiveness. However, recognizing that a skilled labor force is an indispensable ingredient, the consultant team sought to isolate the critical needs which, if not overcome, would impede or prevent the sector from attaining its growth objectives.

Despite the brief four week period that the work had to be completed in, the team devised a broadly representative interview schedule designed to give a reliable snapshot of the labor skills situation in Honduras. Detailed questionnaires were developed for each sector (and are shown in the appendices of this report).

CHAPTER II. THE HONDURAN LABOR MARKET

This analysis identifies the human resources issues associated with three subsectors of the Honduran economy and one occupational category. To understand the constraints that human resources place on the expansion of these subsectors, it is necessary to examine the general trends and functioning of the Honduran labor market.

In this chapter, general trends in the market for labor are explored by analyzing the raw data from the Honduran Household Survey undertaken by the Ministry of Planning, Coordination and Budget through the Division of Census and Statistics. The legal/institutional setting is also examined by analyzing the current labor legislation and the proposed reforms that have been formulated by a joint government/private enterprise/organized labor commission. Additionally, the state of labor-management relations and the existing labor market information systems are briefly described.

A. The Labor Market in Honduras.

Trends in the labor market are closely related to trends in other markets in the economy such as the goods market and the market for capital. The results of the interplay of these markets can be captured by measuring the output of the economy. Tables 1 and 2 summarize the trends in the Honduran economy. Table 1 shows the nominal growth of the economy and the relative contribution to total output of 12 sectors from 1989 through 1993. In table 2 output is expressed in constant terms which allows a rough estimate of the growth of the individual sectors over time.

The last several years show a small reduction in the relative contribution of agriculture, forestry, and fisheries and a small relative increase in the contribution of manufacturing and construction. The relative contribution of other sectors has remained more or less constant since 1989. Table 2 indicates that inflation adjusted growth in GNP has averaged about 4 percent per year with only 3 percent growth between 1989 and 1991. Several sectors have had patterns that diverge from the trend in the economy as a whole. Construction has proven to be quite volatile as have sectors closely associated with construction (dwellings and finance, insurance and real estate). The volatility of electricity, gas and water is less a market driven phenomenon and more a response to changes in public policies (pricing policies and subsidies).

Table 1.
DISTRIBUTION OF GNP BY SECTOR 1989-93
(at current prices)

	1989	1990	1991	1992	1993*
Agriculture, Forestry and Fisheries	21%	22%	23%	20%	20%
Mining	2%	2%	1%	2%	2%
Manufacturing	15%	16%	17%	18%	18%
Construction	5%	5%	5%	7%	7%
Electricity, Gas, and Water	3%	3%	4%	3%	4%
Transp., Storage & Communication	7%	6%	7%	7%	6%
Trade, Hotels, and Restaurants	12%	12%	11%	11%	11%
Finance, Insurance, and Real Estate	8%	7%	8%	8%	8%
Dwellings	8%	7%	6%	6%	6%
Public Administration and Defense	8%	7%	8%	7%	7%
Services	12%	12%	10%	11%	11%
Total** (Millions of Lempiras)	9,256	11,156	13,975	16,103	18,554

*1993 figures are preliminary.

**Total is GNP at factor prices (not including indirect taxes)

Source: Calculations made from material published by the Banco Central de Honduras.

Table 2.
GROWTH IN GNP BY SECTOR
(in constant Lempiras)

	89-90	90-91	91-92	92-93	89-93
Agriculture, Forestry and Fisheries	1%	6%	4%	1%	12%
Mining	-8%	4%	11%	5%	12%
Manufacturing	1%	2%	6%	4%	13%
Construction	-1%	-3%	34%	5%	23%
Electricity, Gas, and Water	13%	1%	1%	8%	24%
Transp., Storage and Communication	4%	3%	4%	3%	15%
Trade, Hotels, and Restaurants	-1%	2%	3%	7%	11%
Finance, Insurance, and Real Estate	3%	10%	10%	5%	30%
Dwellings	4%	3%	3%	4%	16%
Public Administration and Defense	-15%	-4%	4%	4%	-11%
Services	-1%	-6%	7%	4%	3%
Total GNP Growth	0%	3%	6%	4%	13%

*1993 figures are preliminary.

Source: Calculations made from material published by the Banco Central de Honduras.

The slow growth in the Honduran economy has been reflected in the aggregate employment numbers displayed in Table 3. The economically active population increased 22 percent from 1989 to 1993, largely the result of demographics as the participation rate changed by less than 1 percent from 49 to 49.7 percent. While the total number of employed persons also increased approximately 26 percent, the number of underemployed¹ increased by about 10 percent--i.e. it increased by more than 47,000 individuals--an even more disturbing trend when considering that the minimum wage has fallen about 15 percent in real terms over the same time period. In developing economies few individuals have the luxury of engaging in activities that are considered as indicators of open unemployment and these figures have remained low and stable.

Table 3.
TRENDS IN AGGREGATE EMPLOYMENT
1989-1993

	1989	1993	Increase/ Decrease	% Change
Economically Active Population	1,453,056	1,772,899	319,843	22%
Participation Rate	49.0%	49.7%	0.70%	0%
Employed	1,328,726	1,688,830	360,104	27%
Underemployed**	494,410	541,797	47,387	10%
Unemployed	72,333	84,069	11,736	16%

**Working less than 36 hours and desiring to work additional hours or working 36 or more hours and having income less than minimum wage.

Source: Encuesta Permanente de Hogares de Propósitos Múltiples

Aggregate totals give a static picture of a labor market. However, planning for human resource development requires analysis that portrays the dynamics of the market. Tracing these dynamic forces requires the examination of changes in aggregate totals for subsectors rather than sectors as well as changes in the composition of the manpower in subsectors. More importantly, the implicit demand for different kinds/classes/quality of workers as indicated by changing prices (wages) for labor needs to be observed. The analysis that follows is based on the September surveys from 1989 and 1992 of the raw data of the Honduran Household Survey.²

One indication of the demand for different levels of human capital in a labor market is the demand for labor with different levels of education as educational level is an indication of training, ability, and capacity to absorb new training. In Table 4, fully employed³ workers are grouped according to their level of education. In 1989 some 67 percent of the fully employed men and 45 percent of the fully employed women had less than a complete primary education (6 years). In the same year just seven percent of the fully employed men had a complete secondary or some postsecondary education while 20 percent of the fully employed women had that level of education. In 1992 the numbers of fully employed workers (both men and women) with less than a complete primary education had fallen slightly as a percentage of the total number of fully employed, although the number of women who reported being fully employed had risen by almost 40,000. The number of fully employed persons with complete university education increased 85 percent for men and 77 percent for women between 1989 and 1992.

Table 4.
FULLY EMPLOYED PERSONS* BY EDUCATIONAL LEVEL

Education	1989		1992	
	Male	Female	Male	Female
None	212,975 28%	34,009 14%	194,472 20%	48,171 13%
Primary Incomplete	300,594 39%	74,074 31%	323,319 33%	96,646 27%
Primary Complete	157,305 20%	63,321 26%	276,533 28%	101,469 28%
Secondary Incomplete	46,031 6%	22,523 9%	70,277 7%	34,047 9%
Secondary Complete	36,600 5%	38,728 16%	72,489 7%	69,496 19%
University Incomplete	3,346 0%	1,896 1%	6,435 1%	1,393 0%
University Complete	17,146 2%	6,615 3%	31,009 3%	11,710 3%
Total	773,997	241,166	974,534	362,932

*Normal working week of 35 or more hours.

Source: Encuesta Permanente de Hogares de Propósitos Múltiples

Although women represented just 24 percent of the fully employed in 1989 and 27 percent of the fully employed in 1992, this represents a 50 percent increase in the number of female employed in the three year period. While fewer in numbers, fully employed women have generally more education than their male counterparts with twice the percentage of women (22 percent) than men having a complete secondary education or higher.

Table 5 provides a profile of the underemployed.⁴ For both men and women the majority of the underemployed have less than a complete primary education. The number of underemployed using the definition of working less than 35 hour and indicating a desire to work additional hours has remained roughly stable over the three year period. Placing these figures in juxtaposition to the earlier cited figures regarding underemployment (Table 3) indicates that underemployment is more a function of low earnings than reduced working hours.

Table 5.
UNDEREMPLOYED* PERSONS BY EDUCATIONAL LEVEL

	1989		1992	
	Male	Female	Male	Female
None	2,842 21%	5,288 29%	1,730 12%	5,381 25%
Primary Incomplete	5,329 39%	6,325 34%	6,275 45%	5,287 25%
Primary Complete	2,713 20%	4,223 23%	3,295 24%	6,464 30%
Secondary Incomplete	1,110 8%	965 5%	1,212 9%	1,332 6%
Secondary Complete	1,188 9%	1,432 8%	1,101 8%	2,423 11%
University Incomplete	0 0%	0 0%	0 0%	0 0%
University Complete	366 3%	270 1%	243 2%	370 2%
Total	13,548	18,503	13,856	21,257

*Those working 34 or less hours per week and wanting to work additional hours.

Please note that the totals for underemployed persons in this table are significantly smaller than those in Table 3. This difference is due to the fact that the definition of underemployment in this data set is much stricter than that used in Table 3. Table 3 defines as "underemployed" those working less than 36 hours per week and wanting to work additional hours or working 36 or more hours and having an income smaller than minimum wage.

Source: Encuesta Permanente de Hogares de Propósitos Múltiples

An additional insight into the phenomenon of underemployment is suggested by Table 6. The minimum wage, despite periodic increments, has lost considerable purchasing power. By January of this year (1994) the minimum wage averaged about 15 percent less purchasing power than January 1989.

Table 6.
TREND OF MINIMUM WAGE IN CONSTANT 1989 LEMPIRAS
(daily minimum)

	Jan-89	Jan-90	Jan-91	Jan-92	Jan-93	Jan-94	Change
Agriculture, Forestry, and Fisheries	8.00	7.10	5.49	6.75	7.16	6.82	-15%
Mining of Metals	11.00	9.77	9.13	10.06	10.74	10.14	-8%
Non-Metal Mining	9.00	7.99	7.18	7.93	8.44	8.03	-11%
Manufacturing	9.50	8.44	7.58	8.36	8.95	8.52	-10%
Construction	9.00	7.99	6.90	6.78	7.16	6.82	-24%
Wholesale and Retail Trade, Restaurants and Hotels	10.00	8.88	7.98	8.66	9.20	8.77	-12%
Transportation, Storage, and Communications	9.50	8.44	7.88	8.69	9.20	8.77	-8%
Finance, Real Estate, Insurance, and Banking	10.00	8.88	8.30	8.72	9.20	8.75	-13%
Personal Services	9.00	7.99	7.18	7.93	8.44	8.03	-11%
Commercialization or Processing of Tobacco, Seafood, Melons, or Coffee for Export	8.00	7.10	5.49	9.13	8.95	8.52	+7%
Off-shore Maritime activities	10.00	8.88	8.30	9.13	9.72	9.26	-7%

Source: Calculated using monthly CPI and periodic minimum wage decrees.

Change in composition of the labor force does not in itself indicate changes in demand. These changes may be more a result of changes in supply. A general improvement in the school participation rates of the labor force in younger cohorts will in itself change this composition. The best indication of demand for a given level of training or education is the signal of prices. Changes in the relative price of a given type/quality of worker (i.e., educational level) suggest how the demand for that type/quality of worker has changed relative to the supply of workers with those characteristics.

In order to estimate changes in the relative price (and hence demand) for different kinds of labor (using level of education as a proxy for labor quality or human capital) an earnings function was estimated on fully employed persons in 1989 and 1992. Separate estimates were made for men and women.⁵

Table 7 presents the results of the estimation of earnings on the unweighted sample from the September 1989 and September 1992 Honduran Household Survey. For ease of interpretation the regression coefficients were used to estimate monthly earnings for a "typical" worker having 10 years of labor market experience and being

married. The four columns in Table 7 are the estimated monthly earnings for a male and a female with 10 years of labor market experience in 1989 and 1992.

Table 7.
MONTHLY EARNINGS* BY EDUCATIONAL LEVEL
1989 AND 1992

	1989		1992	
	Male	Female	Male	Female
None	110	75	166	149
Primary Incomplete	158	114	217	225
Primary Complete	255	159	312	319
Secondary Incomplete	389	277	712	498
Secondary Complete	595	435	966	718
University Incomplete	710	627	1,238	1,063
University Complete	1,582	1,106	2,323	1,702

*For married worker with 10 years of experience

Source: Encuesta Permanente de Hogares de Propósitos Múltiples

The change in demand for a given type/quality of worker over this three year period is indicated by comparing the earnings associated with given levels of education at two different points in time. Table 8 presents the results of the same earnings estimates for 1989 and 1992, but in this case the earnings for 1989 have been adjusted for inflation using the consumer price index, making it possible to compare earnings in 1989 and 1992.

Table 8.
MONTHLY EARNINGS* BY EDUCATIONAL LEVEL
1989-1992
(in constant 1992 Lempiras)

Education	Male 89	Male 92	Change 89-92	Female 89	Femal e 92	Change 89-92
None	196	166	- 15%	134	149	+ 11%
Primary Incomplete	281	217	- 22%	203	225	+ 11%
Primary Complete	454	312	- 31%	283	319	+ 13%
Secondary Incomplete	693	712	+ 3%	493	498	+ 1%
Secondary Complete	1,059	966	- 9%	773	718	- 7%
University Incomplete	1,263	1,238	- 2%	1,116	1,063	- 5%
University Complete	2,817	2,323	- 18%	1,969	1,702	- 14%

*For married worker with 10 years of experience.

Source: Encuesta Permanente de Hogares de Propósitos Múltiples

For the "typical" male worker there has been a general deterioration in earnings,

but it is at the lower educational levels where earnings have suffered the most. These results suggest that the demand for male workers with low levels of education has fallen relative to the supply of those workers more so than at higher educational levels.

For women the picture told in Table 8 is quite different. It is at the lower educational levels that the monthly earnings of the "typical" female worker have fared the best over the three year period, rising by 11 percent as compared to falling by 15 to 20 percent for men. This suggests that the demand for women with lower levels of education has increased relative to their supply. While problems comparing the unweighted data for 1989 and 1992 cannot be totally discounted, the well-publicized employment of large numbers of women in the maquila industries and its growth relative to traditional places of employment for men with low levels of education like the banana plantations are consistent with the results in Table 8.

Table 8 also indicates that estimated earnings have fallen for both "typical" men and women at higher levels of education. This suggests that the Honduran economy has been generally producing less demand relative to the supply of more highly educated Hondurans, or that the quality of education may be questionable.

The above information should not lead to the conclusion that higher levels of education do not have a return. Examining the results presented in Table 7 and 8 indicate that earnings do increase with education. It should also be noted that, in general, women still earn less than their male counterparts with similar levels of education and experience.

B. Profile of Employment in Targeted Industries

The use of raw data from the Household Surveys also permits a separate analysis of employment and the labor market for the sectors targeted in this report. While the figures from the Household Survey can differ from industry estimates of employment and wages, the use of a sample of household responses to the survey in two different years can give indications of trends in employment and wages.⁶

Table 9 presents the total employment in Construction, Wood Product Manufacturing, Hotels and Restaurants (as a proxy for tourism), and for a group of 346 occupational codes identified by the team consultant in Industrial Maintenance. Growth in total employment in the targeted sectors is placed in the context of total employment growth. While the total number of employed persons grew 22 percent between 1989 and 1992, only Industrial Maintenance occupations and Wood Product Manufacturing employment grew at a level greater than total employment growth.

Table 9.
TOTAL EMPLOYMENT IN TARGET SECTORS
(employed persons)

Sector	1989	1992	Change 89-92
Construction*	67,243	69,939	4%
Wood Product Manufacturing**	1,577	2,289	45%
Tourism 1***	26,781	30,277	13%
Tourism 2****	4,639	4,823	4%
Industrial Maint.*****	38,621	58,873	52%
Total	1,221,728	1,490,288	22%

*All employed persons in construction sector.

** All employed persons in manufacturing wood products.

1*** All employed persons in restaurants and hotels.

2**** All employed persons in hotels and restaurants in hotels.

*****346 different occupations associated with industrial maintenance.

Source: Encuesta Permanente de Hogares de Propósitos Múltiples

The labor force in these four sectors are quite different in regards to educational level. Table 10 profiles the labor force in each sector. In general, Construction and Tourism are characterized by relatively lower levels of education in the workforce when compared to Industrial Maintenance and Wood Product Manufacturing. The labor force in both of the latter two are also somewhat more educated than the labor force as a whole (see Table 4).

Table 10.
EDUCATIONAL PROFILE OF EMPLOYED WORKFORCE
IN TARGETED SECTORS
(1992)

Education	Construction *	Wood Products **	Tourism***	Industrial Maint. ****
None	15.6%	3.0%	12.0%	3.1%
Primary Incomplete	36.9%	13.3%	36.8%	20.9%
Primary Complete	32.8%	27.5%	26.3%	36.8%
Secondary Incomplete	7.5%	12.0%	13.2%	23.2%
Secondary Complete	2.6%	18.8%	9.4%	10.7%
University Incomplete	2.5%	7.5%	.6%	1.9%
Complete University	2.0%	18.2%	1.7%	3.5%
Total	69,939	2,289	30,277	58,873

*All employed persons in construction sector.

** All employed persons in manufacturing wood products.

*** All employed persons in restaurants and hotels.

****346 different occupations associated with industrial maintenance.

Source: Encuesta Permanente de Hogares de Propósitos Múltiples

An attempt was made to analyze the demand for different kinds of labor (different levels of education) within the four sectors using the same methodology used on the entire labor market. This proved impossible in the case of Wood Products Manufacturing because the unweighted sample was too small to give reliable results.

Tables 11, 12 and 13 present the estimated monthly earnings in 1989 and 1992 for a "typical" worker (10 years of labor market experience and head-of-household) in Industrial Maintenance, Tourism, and Construction. Estimates were run on the entire unweighted sample in each case rather than on males and females separately due to the fact that in both Industrial Maintenance Occupations and Construction there were too few women to yield statistically significant results.

Table 11.
MONTHLY EARNINGS* BY EDUCATIONAL LEVEL (1989-1992)
INDUSTRIAL MAINTENANCE OCCUPATIONS

Educational Level	Nominal 1989	Adjusted 1989**	Nominal 1992	Change 89-92
None	243	432	479	+ 11%
Primary Incomplete	243	432	479	+ 11%
Primary Complete	387	689	479	- 31%
Secondary Incomplete	451	803	736	- 8%
Secondary Complete	708	1,260	1,078	- 14%
University Incomplete	596	1,060	1,569	+ 48%
University Complete	1,235	2,198	2,437	+ 11%

*For married worker with 10 years of experience.

**Adjusted using CPI.

Source: Encuesta Permanente de Hogares de Propósitos Múltiples

Table 12.
MONTHLY EARNINGS* BY EDUCATIONAL LEVEL (1989-1992)
TOURISM***

Educational Level	Nominal 1989	Adjusted 1989**	Nominal 1992	Change 89-92
None	209	372	251	- 33%
Primary Incomplete	276	492	448	- 9%
Primary Complete	280	499	518	+ 4%
Secondary Incomplete	420	747	723	- 3%
Secondary Complete	461	821	937	+ 14%
University Incomplete	1,127	2,007	1,729	- 14%
University Complete	898	1,599	2,943	+ 84%

*For married worker with 10 years of experience.

**Adjusted using CPI.

***All persons employed in hotels and restaurants

Source: Encuesta Permanente de Hogares de Propósitos Múltiples

Table 13.
MONTHLY EARNINGS* BY EDUCATIONAL LEVEL (1989-1992)
CONSTRUCTION

Educational Level	Nominal 1989	Adjusted 1989**	Nominal 1992	Change 89-92
None	164	292	310	+ 6.7%
Primary Incomplete	217	386	366	- 5%
Primary Complete	287	511	400	- 22%
Secondary Incomplete	363	647	663	+ 3%
Secondary Complete	531	946	940	- 1%
University Incomplete	513	913	1,303	+ 43%
University Complete	2,287	4,072	2,927	- 28%

*For married worker with 10 years of experience.

**Adjusted using CPI.

Source: Encuesta Permanente de Hogares de Propósitos Múltiples

Each of the three tables of estimated monthly earnings by sector illustrates phenomena that should be considered in planning for training policies and programs. In the case of Industrial Maintenance Occupations (Table 11), the profile of earnings associated with different levels of education diverges from that produced by estimates on the entire sample (Tables 7 and 8). In the case of the individuals identified in this group, earnings do not increase with levels of schooling until a relatively high level of education is reached. One plausible explanation is that this group is really composed of two sectors, one that is more highly educated and more highly paid and another that is less highly educated and less well remunerated. A complete secondary education, or its equivalent with technical training, seems to be the threshold for entering this better-paid sector. Individuals who do not have this level of education seem to be unable to move up in salary through on the job experience or training, indicating that a relatively high level of education is needed to fully benefit from training in this area. While earnings could not be estimated for Wood Products Manufacturing, the similarity of the educational profile of that sector with the Industrial Maintenance Occupation group suggests that this pattern may also hold true for Wood Products Manufacturing.

Table 12 suggests, consistent with the material presented in table 9, that demand for workers in tourism has fallen relative to the pool of workers available. The most affected group is that group with no education where real earnings fell about twice as much as any other group. In the case of Tourism and of Construction the difference in earnings at higher levels of education in the two years are probably the result of differences in the sample in the two years as the unweighted sample in both years in these sectors contains a very small number of individuals with higher levels of education.

In Construction (Table 13) earnings, and hence demand relative to supply, fell at the lower educational levels. These results are also consistent with the indication that the growth in employment in construction from 1989 to 1992 was considerably less than employment growth in the rest of the economy.

C. The Institutional Setting

The buying and selling of labor does not take place in a vacuum. The institutional setting which includes not only the legal constraints on labor market activity but also other kinds of phenomena like attitudes towards what is appropriate work for men versus women and the nature of the personal relations between employer and employee. While these latter kinds of institutional factors may have more significant impact on the labor market, this analysis will concentrate just on the legal setting.

The principal legislation regulating the labor market is the *Código del Trabajo*. The *Código* was developed and implemented in the early 1950s and was at that time consistent with the labor legislation of much of the rest of Latin America and based on a labor market in Honduras dominated by one industry; the production of bananas.

Several attempts have been made to reform the code and minor additions have been made. However, comprehensive reform of the code has not been achieved. A tripartite commission (government, private enterprise, and labor) has been working for approximately two years on proposals to reform the code and an incomplete draft proposal is now available. While several issues still remain for discussion the elements of the proposed reform seem to be the following:

1. Streamline and make more flexible the procedures for the legal resolution of individual and collective conflicts.

Steps include: reducing the number of steps and reducing the time periods for the resolution of conflicts and negotiation, simplifying the procedures for registering rather than certifying bargaining agents, and eliminating some jurisdictional overlap by referring some kinds of conflicts directly to the courts rather than necessitating action at both the level of the Ministry of Labor and the courts.

2. Establish a legal framework for additional kinds of labor contracting.

Current law generally favors "indefinite" contracts. A worker becomes essentially permanent after a two month trial period. This situation has led to abuse and manipulation on the part of labor and private enterprise. Current law does permit some kinds of contracting by season and by job but does not clearly establish other kinds of contracts that are more common in light industry and service sectors which are becoming more important in the Honduran economy. The principal reforms in this sense are to establish and regulate employment that

is less than full-time or that is based on definite periods rather than by job. These reforms also contemplate the provision of benefits on a proportional basis and the transformation of the current "prestaciones" which are used only in case of unjustified firings to a system that still protects workers against unjust firings and allows the payment of a portion of those benefits as severance pay for voluntary separations.

3. Depoliticizing the certification of labor unions and bargaining agents.

Currently the Ministry of Labor is responsible for legal recognition of labor unions. This process involves a complex series of bureaucratic procedures and is susceptible to political influences as legal recognition can be withheld or the process prolonged. The process is especially problematic when different sectors are competing for recognition as the legally recognized representative. Proposed reforms change the nature of this relationship between organized labor and the Ministry of Labor by empowering the Ministry to "register" rather than recognize a labor union. Procedures will be simplified and the ministry will be responsible for certifying that the required procedures have been followed in order to register the union rather than certifying it as the sole representative.

If implemented, the proposed reforms offer private enterprise additional flexibility in contracting labor while offering workers additional benefits at the cost of some job security. The reaction of private enterprise is generally favorable to the reforms, while organized labor is more cautious. The possible loss of status to some of the unions now legally recognized to challenges from new organizations would be more likely if the reforms are implemented. However, the same reforms would make politically oriented manipulation, like the establishment of parallel unions through the Ministry of Labor less likely.

The impact of the current labor code and of the proposed reforms are difficult to gauge due to the erratic enforcement of the current code in Honduras⁷ as well as recent empirical studies in the United States and in Latin America that appear to contradict commonly held views regarding the impact of labor legislation.⁸ Many employers and workers resort to activities designed to subvert the current code. In areas like construction, for example, extensive use of subcontracting avoids both the problem flexibility of the size of the labor force but also can be used to avoid payments to social security. The code possibly gives incentives to some workers to provoke being fired after the trial period in order to pursue the "prestaciones" offered as protection against unjust removal. However the same provision encourages employers to consistently rotate personnel before the two-month trial period elapses, therefore avoiding the responsibilities inherent in having "permanent" employees.

Interviews with an admittedly non-representative sample of firms in the target sectors confirmed that in practice there does exist a great deal of flexibility in contracting

even under the current code. Few employers in these sectors commented that the current code was a real impediment to expanding employment, especially when compared to other constraints like the costs of capital in the case of construction and the security of raw material supplies and electrical energy in the wood products manufacturing sector.

While flexibility effectively does exist, the measures used to achieve it do conceivably add to the cost of doing business. In that sense the proposed reforms may have a moderate impact on labor costs and employment. The potentially greater impact that reforms may have is to create a better climate for investment by promoting greater transparency in labor management relations and the confidence that the "rule of law" will be inviolate.

Notwithstanding, these gains must be measured in terms of the often ignored costs of reforms that allow greater "flexibility" for private enterprise. Reforms that seriously impact the health and security of an already impoverished majority in Honduras will not contribute to future prosperity.

D. Management-Labor Relations in Honduras

Management-labor relations in Honduras are in a state of flux and difficult to characterize. There is the perception that employers do consistently violate international guarantees to the right to organize and right to organize problems in the free trade zones have become serious enough to warrant protests from the AFL-CIO. At the same time there is a consensus that unions are not meeting the needs of their members and need to be democratized.

Many employers stated in interviews that while they were able to work around the labor code, an inordinate amount of time and money was spent on individual labor conflicts. Employers were often able to count in great detail given situations but were less forthcoming when asked to quantify the number of incidents in the recent years.

Table 14 shows the number of individual labor conflicts filed with the Ministry of labor in 1991, 1992, and 1993. Despite worsening employment possibilities in terms of increasing underemployment and the deterioration of real wages the number of conflicts actually fell about 13 percent. To put these figures in perspective, the total number of conflicts filed in 1992 was about 1 percent of the entire employed workforce.

Table 14.
INDIVIDUAL LABOR CONFLICTS FILED

	1991	1992	1993
Total	16,490	14,336	14,382
Construction	1,132	763	1,137
Manufacturing	3,451	2,800	3,674

Source: Ministry of Labor. *Boletín Estadístico* (1991, 1992, 1993)

The levels of union membership are indicated by table 15. Total membership in officially recognized unions has fallen 34 percent since 1989. A rough index of unionization can be calculated for 1992 by dividing the number of union members (166,821) by the number of employed persons (1,404,630) yielding a figure of 12 percent.

Table 15.
CERTIFIED UNION MEMBERSHIP

	1989	1990	1991	1992	1993
Agriculture, Forestry and Fisheries	100,529	101,719	8,868	9,810	11,257
Mining	411	300	675	598	598
Manufacturing	24,200	20,202	12,189	15,553	11,491
Construction	3,470	3,172	3,172	3,906	3,809
Electricity, Gas, and Water	2,196	2,257	109	1,009	9,010
Transp., Storage & Communication	5,090	3,346	6,174	5,644	10,801
Trade, Hotels, and Restaurants	32,422	26,927	17,563	7,909	13,096
Finance, Insurance, and Real Estate	1,874	1,723	1,135	1,205	1,485
Personal, Social, & Comm. Services	75,615	49,607	102,704	121,187	99,409
Total	245,807	209,253	152,589	166,821	160,956

Source: Ministry of Labor

Unions are generally perceived very negatively in the Honduran private sector. Little recognition is given to the positive roles that unions can and do play in providing workers who are less prone to quit and generally better trained as well as the role unions often play in disseminating labor market information regarding available work and wages

to their members.⁹

This seeming impasse will require a good deal of political will on the part of both sectors. It is especially problematic that a reform proposal that will be submitted to congress at some future time may be enacted piecemeal and threaten the balance of the new code, conceivably making labor relations more difficult than the present situation.

E. The Labor Market Information System

The formal labor market information system (LMIS) in Honduras consists of one public and several private systems of linking workers and job vacancies. The public LMIS is directed by the Ministry of labor. The service (Servicio de Colocación) is provided to both prospective employers and job seekers free of charge. Firms register their needs through the listing of vacancies and requirements with the ministry. The ministry provides vacancy information to prospective employees and searches its data base of prior registered job seekers for appropriate candidates. Potential job seekers are registered and certified as to their education and training except when that certification requires technical expertise.

Several private sector institutions also offer a placement service. These services concentrate on relatively more educated workers (secondary and postsecondary).

Table 16 shows the total number of persons registered and placed between 1990 and 1992 as well as the number of firm vacancies registered. While all three activities show an increase over the time period, the impact on the economy is quite small. In fact the 8,194 persons placed in 1992 represented just 2 percent of those who had taken their current job in that year.¹⁰

Table 16.
MINISTRY OF LABOR PLACEMENT ACTIVITIES
(1990-1992)

	1990	1991	1992
Persons Registered	3,711	4,103	4,445
Vacancies Received	3,823	5,441	6,475
Persons Placed	6,318	8,092	8,194

Source: Ministry of Labor. *Memoria de Labores* (1990, 1991, 1992)

Note: Column figures do not reconcile because persons placed may have registered in a previous year. Also, not all persons placed are drawn from registered pool. Persons placed includes those placed out of country (i.e. fishing fleets, cruise ships).

The impact of the Ministry of Labor placement system is very small relative to the size of the economy (8,000 placements in an economy with about 1,400,000 fully employed persons). While the absolute numbers of those placed by the system has increased, a more reliable indicator of demand in the economy is the increased of underemployed described earlier.

The relative unimportance of the official LMIS is consistent with sector interviews that suggested that employers tend to rely on informal methods (signs posted at job sites and word of mouth) as a way to recruit potential hires. This phenomenon was less the case in regards to Industrial Maintenance Occupations suggesting that recruiting relatively uneducated workers is quite easy and relies almost exclusively on informal networks while more highly educated/trained workers are typically recruited through direct contacts with the appropriate training institutions. In relatively few cases are the systems associated with more developed economies (classified advertisements, job vacancy announcements) used.

The heavy reliance on informal systems is often associated with efficiency losses in regards the optimum match between workers and jobs. However, in Honduras the surplus of relatively uneducated and untrained labor combined with the lack of skills necessary to participate in a more formalized information system suggests that little short term improvement could be made by expanding the formal LMIS system until the general level of education and training in the labor force was improved.

Endnotes

¹ Defined as working less than 36 hours per week and wanting additional hours or working 36 or more hours and having income less than the minimum wage for that sector and geographic area.

² The latest available data, the March 1993 survey was not used because of the seasonal nature of economic activity in the country (coffee harvests, cane harvests and processing, etc.). The latest available September survey (1992) was used to reduce the seasonal affects.

³ Fully employed follows the US convention of normally working 35 or more hours a week.

⁴ In this case the underemployed are defined as normally working less than 35 hours a week and indicating a desire to work additional hours.

⁵ Earnings were estimated in the following form:

$$\text{LN(Monthly Earnings)} = \text{EXP} + \text{EXP}^2 + \text{HEAD-OF-HOUSEHOLD} + \text{PUBLIC} + \text{PRINC} + \text{PRICOM} + \text{SECINC} + \text{SECOM} + \text{UNINC} + \text{UNCOM}.$$

where:

LN(Monthly Earnings) is the natural log of monthly earnings

EXP is general labor market experience (Age - (years of school + 6))

EXP² is EXP*EXP to give the proper functional form

HEAD-OF-HOUSEHOLD is a dummy variable for marriage

PUBLIC is a dummy variable for the public sector

PRINC is a dummy variable for incomplete primary (no school is omitted category)

PRICOM is a dummy variable for complete primary (no school is omitted category)

SECINC is a dummy variable for incomplete secondary (no school is omitted category)

SECOM is a dummy variable for complete secondary (no school is omitted category)

UNINC is a dummy variable for incomplete university (no school is omitted category)

UNCOM is a dummy variable for complete university (no school is omitted category)

⁶ To a large degree the differences are differences in how the sector or employment in the sector is defined.

⁷ see Painter, Flora and Maria de los Angeles Crummet. *Trip Report: Phase I-Study of the Relative Costs of Female and Male Labor in Latin America*. Coopers and Lybrand; no date.

⁸ Machin, Stephen and Alan Manning. "The effects of minimum wages on wage dispersion and employment; evidence form the U.K. wages councils." *Industrial and Labor Relations Review*. Vol 47, No.2; 1994.

Marshall, Adriana. "Economic consequences of labour protection regimes in Latin America." *International Labour Review*. Vol. 133 No. 1; 1994.

⁹ Marshall, Adriana. *op.cit.*

¹⁰ Roughly 2 percent of those reporting job tenure in current job of less than one year (368,396).

CHAPTER III. TOURISM

A. Description of the Industry

Product line, markets, employment levels, exports, foreign exchange earnings

Tourism in Honduras has shown modest but regular increases in its contribution to the country's exports over recent years. It ranks fifth in terms of export earnings for the country, behind bananas, coffee, shell fish, and zinc and lead.

In 1992, tourism counted for 3.5% of total exports (\$152 million in receipts), compared to 2.7% in 1990 (\$77 million). Other industry indicators show slight increases in the number of days spent in the country (4.0 in 1992 compared to 3.5 in 1992) and an increase in daily expenditures per tourist from \$108 to \$152 over the same period.

In 1992 statistics indicate that 277,830 tourists visited Honduras. Of this total, 86,000 came from North America, 23,000 from Europe, 149,000 from Central America and 20,000 from other regions. Since 1989, average annual increases have been around 15%.

Despite steady progress even during difficult economic times, tourism in Honduras remains an industry in the very early stages of development, compared to other Central American and Caribbean destinations. The obstacles facing tourism development include the following:

- inadequate physical infrastructure -- ranging from poor airport terminals, bad road conditions in many regions, inadequate power and telecommunications, etc.
- inadequate marketing of Honduras as a travel destination -- the country's promotional body, the Honduran Tourism Institute, is severely underfunded in its efforts to undertake effective marketing to establish a strong image for Honduras as a travel destination
- inadequate guarantees to foreign investors -- titles to land ownership are frequently in dispute deterring foreign investment from entering the country
- a poor 'service mentality' within the tourism industry -- attitudinal and cultural problems related to customer service to visitors, affecting all levels of interaction with tourists

- low skill levels at virtually all levels of tourism personnel -- poor basic education and lack of skills training in tourism result in a lack of professionalism in the industry

1. Tourism Potential

Honduras has unique natural resources which, if carefully developed, offer potential for making tourism one of the country's leading export sectors and a major employment source for Hondurans. In view of its potential, Honduras should well be able to match the performance of Costa Rica and Belize in terms of attracting North American and European travelers. The prime potential extends along the northern tier of the country, from the ruins of Copan in the interior along virtually all the north coast, including the Bay Islands. These tourism products divide into several categories:

- **Beaches**

Along the north coast on the Caribbean, large stretches of beach area exist, as yet largely undeveloped because of lack of infrastructure (road, hotel, and air) in the area. Areas deemed to have particularly strong potential include Trujillo, Tela, La Ceiba, Omoa and Cortes.

- **Bay Islands**

The three bay islands are considered prime development areas. The coral reefs along the islands are among the finest in the world, offering significant potential for sport diving and snorkeling, and fishing. Beach potential however is substantially less than along the north coast.

- **Archaeology**

Copan ranks as one of the principal sites among Mayan ruins, comparable to Tikal in Guatemala and Chichen Itza in the Yucatan. It has been designated as a World Heritage Site. Other sites are found in the Valle de Sula and the Valle de Comayagua.

- **Eco-Tourism**

Eco-tourism potential is believed to be substantial in Honduras, particularly in the forests and river areas. The Rio Platano biosphere has been designated by UNESCO as a World Heritage Site. National parks in the interior, the Lake Yojoa basin, Rio Patuca, and Caratasca Lagoon, and the coral reefs of the Bay Islands are key tourism assets of the country. Wildlife reserves are considered to be significant, particularly in such areas as Rio Platano, la Mosquitia, and Capiro and Calentura.

- **Tourism Free Zones**

In 1989, the Honduran government established special fiscal incentives for designed tourism development areas (ZOLTS), including the Bay Islands, Tela, La Ceiba, Copan Ruins, Trujillo, and Amapala. Investors coming to these free zones are accorded tax relief in several areas, such as duty free import of equipment and materials, exemption of income tax for 20 years and from municipal taxes for 10 years.

2. Tourism Development Strategy

Recognizing the potential of tourism in the nation's development and as a major source of employment, the Government, through the Honduran Tourism Institute, has established several short and medium term strategic goals.

- **Short terms goals** include completion of key infrastructure projects in the principal tourism areas of the Bay Islands and the Copan Ruins as well as the development of plans to open up eco-tourism potential in the center of the country.
- **Medium-term goals** include the study and design of tourism complexes in areas such as the bay of Tela and Trujillo as well as plans for the longer-term development of eco-tourism in other regions of the country. New emphasis will be given nature/adventure tours, colonial cities, and the country's distinct ethnic regions.

3. Structure of the Tourism Sector-- Upstream and Downstream Linkages

The principal poles of tourism activity are centered around the following:

- hotels and lodging
- food and beverage
- tourism agencies and tour operators
- tourism transportation
- car rentals
- tourism guides

The size of the sector in 1993, in terms of the number of establishments, was as follows:

- hotels - 292 (7,000 rooms)
- restaurants - 555
- tourist agencies - 118
- artisan shops - 99
- night clubs - 76
- car rentals - 38
- total establishments - 1178

4. Organization of the Tourism Sector

At the government level, the tourism sector is supervised by the Honduran Tourism Institute, attached to the Secretary of State for Economy and Commerce. The IHT's function is the conservation, protection, creation, and improvement of tourism resources in the country, as well as the formulation of national policies and the promotion of private sector investment. The IHT is currently launching new initiatives to focus its marketing on specific segments of travelers coming from North America and Europe.

At the level of the private sector, the Honduras Tourism Chamber of Commerce is an association, designated by law and including all tourism interest, designed to represent the industry and its interests. In addition, a variety of private industry associations exist, such as the Hotel Association, the Travel Agency Association, the Airlines Association, the Tourism Workers Association, and the Tour Operators Association.

Legislation and laws affecting the tourism sector include the following:

- **Labor laws**
 - Labor Code of 1959 affecting labor relations at all levels
 - Law of the 7th day and 13th month of 1982 governing payment periods for permanent employees
 - Minimum wage law of 1975, establishing criteria for minimum wage determination

- **Tourism promotion laws**

- Law establishing the Honduran Tourism Institute of 1972
- Law creating the tourism development zones (ZOLT) and the export processing zones (ZIP) of 1992.

5. Tourism Training Centers

The government of Honduras has established several training centers for the purpose of developing the skills required in the tourism industry:

- **INFOP (Instituto Nacional de Formación Profesional)**

INFOP offers training at the basic level (habilitación) as well as in specific skill areas (complementación). Training occurs through structured courses and seminars in the following areas:

- marketing
- food and beverage service
- administrative/financial
- human resource management

INFOP has its major tourism training center in Tegucigalpa. Satellite centers exist in San Pedro Sula and La Ceiba, and another is planned in Tela. Tegucigalpa is the only center with a special infrastructure for training tourism personnel.

- **Universidad José Cecilio del Valle**

- The university is the only degree-granting institution in the country which offers training in tourism management

- **Ministry of Public Education**

The ministry has offered training in this sector since 1991, given through the following institutions:

- Técnico Santo Tomás (San Pedro Sula, Cortes)
- Franklin Roosevelt (Puerto Cortes, Cortes)
- Triunfo de la Cruz (Tela, Atlántida)
- Alvaro Contreras (Santa Rosa de Copan, Copan)
- Jose Santos Guardiola (Roatan, Islas de la Bahía)

B. Description of the Labor Force

Occupational mix, education/skill labor, age, experience, gender, turnover, income levels

The Honduran Tourism Institute (IHT) estimates that in 1994 tourism will account for approximately 29,500 jobs, broken down as follows:

- Direct employment of 12,900
- Indirect employment of 16,500

The IHT also estimates that the job growth rate is approximately 12% annually, coming mainly from food and beverage operations as well as the hotel sector. Based on total visitors in 1992 of 277,000 and a growth rate of approximately 6.5% a year, total tourism employment is projected as follows:

- 1996 -- 36,500
- 1998 -- 44,336
- 2000 -- 53,224

Principal concentration of employment in tourism is found in the central and northern zones of the country, namely Tegucigalpa and San Pedro Sula, although neither of these cities is considered to be prime tourism sites.

The principal employers in the sector were food and beverages and hotels. In 1993, out of 12,900 jobs (direct employees) in the sector, restaurants accounted for 6,300 and hotels for 4,100. Other employers included night clubs (833), tourist agencies (725), car rentals (271) and artisan shops (240).

The tourism labor force is mainly composed of workers with very minimal skills and education. Statistics on the educational level of the approximately 30,000 tourism workers (both direct and indirect) are not available. However, it is generally accepted that the typical tourism employee's education mirrors the national average of approximately four years of basic education. The great majority of the work force is employed in the food and beverage and hotel subsectors where only a few jobs require a high school or university level education as a condition for entry.

The food and beverage subsector employs largely waiters, cooks, bartenders, cleaning personnel, cashiers, accountants, and restaurant managers. Few entry level people have obtained training in the required skills prior to entering these jobs.

Jobs in hotels are frequently gender-specific. For example, women dominate jobs such as housekeepers, laundry, and secretaries whereas men hold virtually all positions in maintenance, drivers, security functions, bartenders, doormen and concierges.

Turnover is highest in the lowest paying jobs, such as housekeeping and waiters where the skill levels are lowest. Employment is relatively stable in the administrative functions, such as accounting and middle management which typically require completed secondary education plus specific vocational skills.

Daily wages in 1993 are shown in Annex 1. Large gaps are evident between salaries of managers, accountants, and assistant managers, whose positions require completed secondary school and specialized training, and those of hotel workers and food and beverage personnel. In 1993 the median salary for male administrators was 120 lempiras per day (for women administrators this figure was 47 lempiras per day), compared to 22 lempiras for cooks, 26 lempiras for electricians, and 31 lempiras for cashiers. Differences in pay scales between men and women vary widely according to function; male administrators are paid three times as much as women administrators and male accountants twice as much as women, whereas at the level of cooks, waiters, and housekeepers the difference is minimal.

C. Skills/Core Competency Requirement and Identified Areas of Deficiency

The consultant team met with a broad cross section of tourism-related companies including the following activities, organizations, and regions (see Appendix for list of interviewees):

- **Tourism activities**
 - hotels
 - food and beverage operations
 - tour operators
 - tour guides
 - tourism agencies
 - airline operations

- **Tourism-related organizations**
 - Instituto Hondureno de Turismo
 - Hotel Association
 - Tourism Agency Association
 - Chamber of Tourism
 - Chamber of Private Businesses
 - Association of Hotel Workers
 - Association of Tour Operators

- **Regions where interviews were conducted**
 - Tegucigalpa
 - San Pedro Sula
 - Copan
 - Bay Islands

1. General Observations of the Labor Force from the Tourism Industry

Tourism in Honduras can be generally segmented by international and local tourism. By its nature, the most profitable part of the market is composed of guests from abroad who are accustomed to international standards. Commentaries from all branches of Honduras's tourist industry were unanimous that Honduras is well below international standards of service, accommodation, transport, and general infrastructure.

With respect to tourism personnel, a recurring theme is the issue of culture, attitude and 'client service focus' in Honduras, which falls well below meeting the needs of an internationally competitive tourist industry. Hondurans are said to be generally unaware of the requirements that make tourism a thriving industry and have little sensitivity to customer satisfaction as a 'product'. The issue of attitude is all pervasive and begins when tourists arrive at Honduras's airports and are confronted with unfriendly and disorganized personnel.

Hence, in virtually all branches of tourism, managers speak of the need of attitude training to develop a client service approach among workers. It is admitted, however, that extremely low wages give workers little incentive to change traditional ways, and the low level of education acts as an obstacle to changing attitudes.

Interviews conducted with numerous hoteliers and food and beverage managers revealed the frustration of broadbased needs with no reliable sources of recruitment or training. Beginning at the top, hotel managers themselves have seldom had formal hotel management training. Most hotels are family-owned and managed, and managers (or family members) are not sent abroad to be trained as professional managers. Management's own lack of exposure to formal training is evidenced in their lack of emphasis on employee training within the hotel industry.

Hotels and restaurants, which account for most employment in the tourism industry, typically indicate that they lack qualified personnel at all levels of operations, from managers to cooks. When pressed to prioritize these needs, two areas dominate:

- **food and beverage operations**

Hotels and larger restaurants cite their need for qualified cooks as their most pressing need. Turnover of cooking staff is rapid and good chefs are at a premium. Curiously, the wage levels of cooks is, however, exceedingly low with maximum wages ranging from 30 to 40 lempiras a day. Hotels do not appear willing to increase the wages for scarce skills in spite of the severe shortages.

Qualified, customer-oriented waiters are another oft-cited need. By nature of the job, waiters are unskilled with only minimum primary education. Few are willing to undertake training courses both because of low wages as well as the fact that hotels seldom pay more for trained waiters than those hired with no training. Hence, workers have no incentive to improve their skills on their own before being hired. Maximum daily wages for waiters are around 25 lempiras whereas minimum wages are 20 lempiras. These are not wages on which Hondurans can survive.

In regions such as the Bay Islands, wage differentials between hotels will draw good cooks from lower paying to higher paying hotels. However, in the cities, wage rates tend to be relatively equal, with little poaching occurring among hotels.

Hotel managers uniformly complain about the unavailability of good culinary training. INFOP provides the principal cooking school, but hoteliers and restaurateurs argue that it develops only very basic skills that are inappropriate for hotels and restaurants with an international clientele.

- **Mid-level supervisors**

The second most cited area of need is the mid-level supervisor of hotel and restaurant operations. Supervisors are seldom hired from a training institute, but promoted from within. Hence, formal training in management and even mastery of the basic skills they are supervising is usually lacking. The weakness of middle management therefore requires managers to get intimately involved in daily operations, causing serious morale problems as well.

2. **Other areas of tourism**

Interviews were held with tour operators, tourist agencies, and tour guides to investigate their issues. Broad needs were cited, with little or no satisfaction coming from existing training programs. Tour operators and tour guides repeatedly cited the failure of the government to launch a strong tourism marketing campaign, unlike other Central American countries (Costa Rica was invariably cited as an example of where

Honduras should be today).

Without bringing more tourists to Honduras, operators, travel agencies, and guides agree that the market is too small to justify training programs focussed strictly on developing guides and other tourism services. All deplore the fact that Honduras has exceptional potential for varied tourism experiences, but has scarcely begun to exploit that potential. The failure of the Honduras Tourism Institute to establish even the beginning of a strong market image was cited as the heart of the problem. The dilemma was noted that until tourism begins to grow rapidly, Hondurans will have no incentive to train themselves in the necessary skills.

Tourism agencies are apparently able to take care of their personnel needs better than other groups because of their associations with the airlines who offer training programs in reservation systems. Tourist agencies operate on extremely low margins and are sensitive to increased competition in a limited market. Proposals to train new tourist agency personnel have been rebuffed as likely to bring in new competitors into an already tight market.

Knowledgeable and tourist-oriented bilingual guides are in short supply. In those areas of tourism believed to have large potential, such as the Mayan ruins and eco-tourism focussing on botanical and bird life, individuals with mastery of these subjects who can act as bilingual guides with a 'customer orientation' are rare. Formal training programs do not exist and guides are trained on the job. Guides furthermore must frequently be trained drivers since tour operators can seldom afford both a driver and a guide for a small size tour traveling by bus.

It is acknowledged however that the volume of tourist coming to Honduras is not yet sufficiently great to justify formal programs. Furthermore, a guide's knowledge (for example, of botany or ornithology) is so specialized that tour operators believed that they must be trained on site and probably by university-level teachers. Tourists who are attracted by archeology or eco-tourism sites expect a high degree of professionalism and articulateness from guides.

D. Workplace Practices of Employers

Recruitment, training, promotion, job security, wage policy employee participation "management decisions", organizational structure, integration of human resource practices and long-term strategies, and promoting opportunities for women.

The tourism industry, because of its diverse functions, has no clear pattern of recruitment and training. There is no clear career path for entry level people to enter the tourism industry and very few structured tourism management training courses exist. Employers in the hotel and food and beverage industry generally recruit from a pool of

unskilled workers.

Recruitment is usually done by word-of-mouth, personal referral, or interviewing walk-in applicants. In some cases, more the exception than the rule, hoteliers will advertise in local newspapers. In hotels that are unionized, namely the larger hotels in Tegucigalpa and San Pedro Sula, recruitment, like promotions, usually must be done within union ranks and union approval must be obtained. Hoteliers described the difficult bargaining process in union negotiations when they need a specialized person who comes from outside the union.

Since hoteliers and restaurateurs seldom recruit from INFOP, workers are trained 'on-the-job' in an informal, often haphazard way. Quality of training therefore depends on the supervisors in charge of the new employees, who themselves have not been trained.

Guaranteeing quality is a constant problem for both hoteliers and restaurateurs. Turnover is rapid in the category of waiters and housekeepers and mid-level supervision is weak. Managers are frequently besieged with daily problems of ensuring quality because of these factors, plus poor or non-existent training as well as the lack of a strong client service focus among local employees.

1. Employers' Use of Existing Training Programs

As mentioned earlier, training programs for the tourism industry (other than those given in-house by employers which account overwhelmingly for all training) are limited to very few institutions. Employers' opinions on these programs tend to be relatively consistent.

- **Instituto Nacional de Formación Profesional (INFOP)**

With occasional exceptions, invariably from smaller hotels and restaurants, INFOP is broadly and strongly criticized, with comments varying from 'useless' to very low level. In short, tourism establishments catering to international travelers do not turn to INFOP for their training nor do many of them solicit INFOP to undertake in-house training. Most hotels have had some past experience with INFOP training, either on their premises or jointly with other hotels. Their experience has been poor.

Hoteliers note in particular that INFOP instructors are individuals who were either rejected candidates or fired employees from hotels. INFOP's salaries are lower than those of most hotels and therefore INFOP cannot attract good people as trainers.

INFOP is broadly viewed as very political, with the government placing political supporters in positions they are not qualified for. INFOP employees readily confirm this observation, noting that with each change of government, there are broad changes of

staff. INFOP is seen as a sinecure for many people, with an inordinately high percentage of staff in administrative, non-teaching functions.

INFOP's concentration tends to be in the cooking and waiters area. The cooking school teaches very basic cooking techniques which are appropriate for small restaurants catering to local clientele. Major hotels and restaurants, with a need for international standards, view these levels as poor to unacceptable.

INFOP's only major tourism operation is in Tegucigalpa, and caters primarily to local hotels and restaurants. Furthermore, Tegucigalpa is not the focus point of Honduras' long-term tourist development and therefore can be expected to have little impact on international tourism. INFOP has small modular operations in San Pedro Sula and La Ceiba, but these are short-term courses performed on the premises of those businesses who invite them to undertake a short assignment. Hoteliers interviewed see these brief training modules as too short and superficial to help them achieve international standards.

The observation in all such courses is that there are no training standards in any of the skills-development areas. Reference is made to international standards, used in other Central American countries and the Caribbean, for hotels and food and beverage industries, that are readily available to INFOP and other training institutions.

- **The Instituto Hondureño de Turismo (IHT)**

The IHT offers occasional training programs, albeit not on a sustained basis. The IHT receives technical assistance from the Mexican Government which has put on several training programs. Hoteliers complain that these are only for a few days each and therefore not a solution to the skills problem.

The IHT however recognizes that it must act to improve the standards of service of tourism personnel and has the freedom to work with groups other than INFOP. The IHT is currently in the process of establishing hotel classification standards, by which hotels are awarded stars, in which hotel service is likely to be included in the factors determining a hotel's classification.

- **The Universidad Jose Cecilio del Valle**

Jose Cecilio del Valle (UJCV) offers the only degree program available in tourism. The program was established in 1989 and offers a two-year technical diploma and a four-year licenciatura. It was originally designed by tourism managers from the International Executive Service Corps (IESC) and its teaching staff has been partially trained in Mexico and Spain at tourism schools. Participation, however, is small, numbering only about 20 in each year's class. The university's explanation is that tourism management is still not seen as prestigious, with students preferring the

traditional disciplines of law and business.

The curriculum is very broad, offering a broad variety of courses, including general skills (accounting, languages, general administration) to specific tourism related skills (managing tour packages, food and beverage, hotel management, tourism sales and marketing, and travel agency functions). The university is flexible in its approach and is interested in collaboration with other training efforts, public and private, to train managers and trainers. Critics of the UJCV argue that the program is too general and graduates are lacking in specific, practical skills.

E. Conclusions

1. The Needs:

- **Industry and training institutions not only do not work together, they do not even communicate. Business-government relations are very poor in the tourism industry in the areas of training.**
 - **INFOP**
 - **has established no training standards to ensure that its trainees meet minimum standards**
 - **does not have well-qualified trainers, who receive very brief training themselves as teachers**
 - **is extremely political in its staffing and spends excessive amounts of its budget on administrative staff rather than paying its trainers competitive wages**
 - **Hotels and food and beverage industry**
 - **have uniformly been uncooperative with government and other groups in finding solutions to the problem**
 - **have failed to organized themselves to put forth constructive suggestions, despite the existence of organizations and associations whose function it should be to work with training institutions**
 - **offer employees very little incentive to obtain training by maintaining a wage structure that does not reward skills or training**
 - **has established no industry standards for themselves (in the case of hotels) which makes the job of training institutions difficult**
 - **refuse to pay for training for employees or give employees time off with pay to undertake such programs**
 - **choose to hire high ratios of unskilled employees per hotel guest, rather than reduce that ratio to international standards by increasing**

- the number of skilled employees with better pay scales
- management's own lack of formal skills, which limits their awareness of what is needed

2. Approaches to Solutions

- Any solution will require that the private sector in the tourism industry take a leadership role
 - tourist industry associations in Honduras abound, but few have any active program to solve the industry's problems; efforts to organize industry initiatives to address the problems tend to be met with indifference and inertia
 - industry should be actively involved in helping training institutions establish training standards by communicating their exact training needs to these institutions
- INFOP and CADERH, because of its flexibility, should actively pursue partnerships with industry associations to address the problem
 - INFOP should offer to give 'management contracts' for the tourism training programs to groups like the Hotel Association to both run and staff the INFOP programs, using INFOP facilities
 - CADERH centers dedicated to hotel and restaurant functions should be established in the larger and emerging tourist regions (San Pedro Sula, North Coast, and the Bay Islands) to train trainers in the skills needed for priority jobs; private sector representatives should be actively involved with commitments to invite these trainers to train regularly on their premises
 - training standards must be established for these institutions, perhaps based on standards already in place in other Central American and Caribbean tourist areas; curricula from established institutes (such as the Culinary Institute of America) should be adapted to the Honduran context
 - teacher training must be strengthened in tandem with the establishment of training standards; universities such as Jose Cecilio del Valle, UNITEC, or UNAH should be designated and financed to give strong teacher training for all institutions working with the tourism sector; private sector participation must also be present

3. Implications for Training Institutions

Two alternatives might be appropriate for CADERH:

- **A CADERH National Tourism Training Center as a 'trainer of trainers' operation on the North coast which would send its trainers to various parts of the North Coast, Bay Island, and Copan to train on the premises of tourist establishments**
- **Alternatively, new CADERH centers, dedicated solely to training entry and mid-level employees in the tourist industry, could be located in or near the new tourism development sites where current and future employees live, such as Roatan, La Ceiba, Tela or Copan. They should include the following elements:**
 - strong local tourist industry participation
 - concentration on entry level skills in cooking, waiting, housekeeping, and front office services
 - emphasis on creating a service mentality among all employees
- **Reinforcement of the degree granting programs of the universities, including the Universidad Jose Cecilio del Valle, UNITEC, or UNAH, to establish tourism management as an accepted career track in Honduras.**
 - industry support of the university programs by establishing work-study opportunities in the management and supervisory areas
 - industry and CADERH support of the universities as a trainer of trainers program
 - international technical assistance directed to the universities (such as the IESC, USAID, Spanish and Mexican technical assistance)
- **Formation of a private Tourist Industry Training Consortium to review training needs and initiatives. The Consortium would be a consultative organization only and composed of:**
 - Cámara de Turismo
 - Asociación de Hoteles
 - Asociación de Agencias de Viajes
 - Asociación de Tour Operadores
 - CADERH
 - Universidad José Cecilia del Valle
 - INFOP
 - Instituto Hondureño de Turismo

4. Linking Hotel and Restaurant Classifications to Training of Staff

To develop the necessary demand for training programs as well as to ensure the quality of tourism personnel in Honduras' hotels and restaurants catering to international

tourists, the IHT, which is currently in the process of developing a classification system for hotels and restaurants, should include training levels of employees as a key component of its classifications.

It is widely acknowledged that Honduras lacks internationally-recognized classifications of its tourist establishments, which are common in other Central American and Caribbean countries. To establish Honduras as a competitive destination, the tourist industry needs both these classifications as well as assured quality of hotel and restaurant service.

The length and quality of employee training in hotel and restaurant skills should be included as a criteria for attaining the various categories of classification. Hotels and restaurants aspiring to an international-level classification would therefore be behooved to engage in active training of their employees, thereby creating the necessary demand for training programs which at present is lacking.

The initiative to require hotels to meet minimum training standards would have to be accompanied by programs to upgrade the quality and availability of training throughout the country's leading tourist regions.

Annex I

**Salario Diario por Ocupacion y Sexo en la Actividad
Comercio al por Mayor y Menor,
Restaurantes y Hoteles**

Varios Lugares - 1993

Ocupacion	Salario Diario									
	Salario Minimo		Salario Medio		Salario Modal		Salario Mediano		Salario Maximo	
	M	F	M	F	M	F	M	F	M	F
Aseadora	-	20.00	-	22.25	-	-	-	21.66	-	25.36
Ayudante Gerente	52.35	33.33	117.84	38.66	-	-	117.84	38.86	83.33	44.40
Ama de Llaves	-	36.66	-	44.85	-	-	-	36.66	-	52.56
Ayudante general	18.26	18.26	26.90	24.93	24.36	24.36	26.36	31.56	42.30	38.76
Auditor	31.66	-	40.94	-	-	-	45.18	-	52.23	-
Bodeguero	24.36	-	29.01	-	31.10	-	30.30	-	31.10	-
Cajero	20.00	18.00	32.20	24.76	20.00	30.00	41.91	18.00	43.66	32.00
Concinero (a)	16.66	30.93	27.99	35.99	20.00	-	36.54	35.99	39.36	41.06
Camarera	-	20.66	-	28.003	-	26.13	-	27.66	-	33.33
Conserje	18.33	-	27.74	-	21.93	-	21.93	-	36.80	-

Ocupacion	Salario Diario									
	Salario Minimo		Salario Medio		Salario Modal		Salario Mediano		Salario Maximo	
	M	F	M	F	M	F	M	F	M	F
Contador	39.46	34.20	71.64	45.21	-	-	61.31	46.68	91.66	55.56
Dependiente (a)	16.66	16.66	18.88	18.33	18.33	20.00	-	20.00	20.00	20.00
Electricista	25.03	-	26.11	-	-	-	26.11	-	27.20	-
Gerente	58.00	144.00	111.99	138.66	-	-	84.66	138.66	193.33	144.00
Jefe Personal	93.40	68.83	105.00	76.93	-	-	105.60	76.66	45.60	85.32
Masero (a)	20.00	21.93	23.67	26.70	26.13	-	26.13	27.41	26.13	30.43
Motorista	18.00	-	22.26	-	23.33	-	18.00	-	26.66	-
Oficinista	28.33	20.00	31.90	30.00	-	-	29.73	30.00	37.66	40.00
Recepcionista	24.23	27.50	29.55	32.03	-	-	38.76	29.88	38.76	32.03
Supervisor (a)	26.66	30.00	43.78	37.66	40.00	33.33	51.26	33.33	66.66	45.33
Secretaria	-	33.33	-	45.57	-	-	-	42.93	-	62.83
Vigilante	16.66	-	18.93	-	-	-	18.71	-	21.66	-

CHAPTER IV. WOOD PRODUCTS

A. Purpose of Study

Honduras is a highly forested country (see Figure 1). As such its potential for generating exports and economic growth through the development of a profitable and sustainable wood products industry is substantial.

It is the purpose of this sectoral analysis to evaluate the state of the wood products industry in Honduras in particular focusing on the need for new training programs to improve labor force quality. Recommendations are made which address enhancing human resources of the wood products industry and making this sector a more driving force in the Honduran economy.

B. Methodology

The methodology used included an examination of all available statistical information regarding the forest sector and the conduct of interviews with government, trade associations and individual companies. Background information was developed by several Honduran Peace Scholars (HOPS) prior to the arrival of the consultant team in Honduras. Of primary importance was the development of a list of potential interviewees (See Appendix) who would not only be representative of that part of the forest products sector involved with export products, but also have the experience and understanding of the Honduran forest products sector to identify areas of future need and opportunity.

Two questionnaires were developed for interviews to solicit information in an organized fashion. One questionnaire was designed for individual forest products companies while the other was geared towards wood products trade associations. Interviews with people from government agencies, private consultants, and other organizations with a connection to forest products were conducted in a more impromptu fashion and dealt with their unique relationship to the sector.

People interviewed were selected from the areas near Tegucigalpa (location of $\approx 25\%$ of the industry) and San Pedro Sula ($\approx 75\%$).

C. Description of the Industry

Honduras is a country with a substantial forest resource. Approximately two-thirds of the country's 11,250,000 hectares (ha.) ($\approx 7,369,000$) are forested. Of the forested land, 2,344,000 ha. are in hardwood, while 2,836,000 ha. contain pine. Much of the pine grows in homogeneous stands (Figure 1), which avoids certain difficulties associated with managing and utilizing mixed species forests. Unfortunately, 2,189,000 ha. of land have experienced deforestation, and this number continues to grow at a troublesome rate. Though forests can be found throughout the country along with some associated products activity, nearly all of the forest products industry (especially that with export capabilities) is in the regions near Tegucigalpa and San Pedro Sula.

Although there is a wide variety of products (lumber, veneer, posts, fences, broom sticks, lobster traps, chemicals, and others) that emanate from the Honduras forest industries, furniture is by far the most dominant with respect to export.

1. Relevant Forest Policy

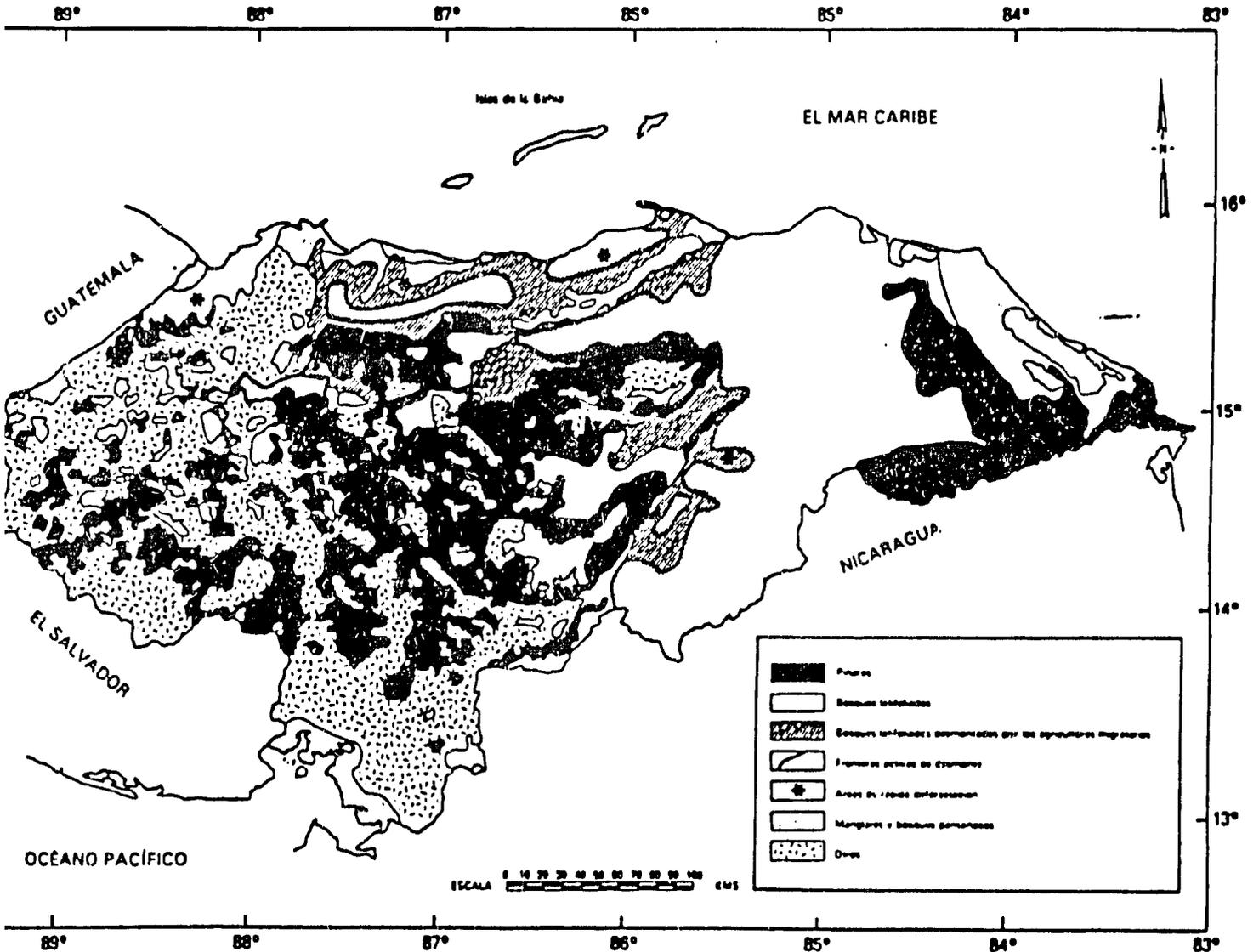
Government policy related to the administration and utilization of Honduran forests has evolved over the past two decades. In 1974, the Corporación Hondureña de Desarrollo Forestal (COHDEFOR), a public corporation, took over ownership and control of all forest lands in Honduras. Due to numerous difficulties in the system, (including lack of basic forest measurement data, no rational management plan, and corruption) forest output dropped from 400,000,000 board-ft (bd-ft)(1974) to 40,000,000 bd-ft (1992). In 1992, a change in law made COHDEFOR the owner of public lands and manager of forest utilization plans on private lands. This policy change, designed as a catalyst for the development of a forest products industry, precipitated the creation of many sawmills and other forest products companies throughout the country in a short time. In fact, the number of forest products companies increased from 58 to 230 between 1989 and 1994, with most of the increase taking place since 1992.

However, the new system was replete with its own set of difficulties. As part of the new policy, timber sales on public lands (about half of all forest lands) were done by public auction, whereas in the past, log prices were set, and therefore, reflected artificial measures of worth. The new policy allowed market forces to drive prices from \$US0.42/bd-ft to \$US2.70/bd-ft. This rapid change in raw material cost had a devastating impact on small companies that were not well capitalized. As a result, by August 1994, the number of forest products companies in Honduras was down to about 150.

In addition to the sudden change in raw material costs, questions relating to land tenure have created the most troublesome obstacles for the forest products industry. Due to uncertainty regarding land and resource ownership, even legal timber sales often went unrealized. Bribery, threats of violence to forest operators, and other difficulties

became part of the mode of operation in logging. All indications from the interviewees is that uncertainty in material supply is one of the most formidable obstacles to the growth and prosperity of the forest products industry. Only when such issues are resolved will industry confidence form a foundation upon which further expansion and development can take place.

Figure 1. Map of Honduras illustrating the distribution of forest cover



2. Other Government Policy Implications

Except for policies affecting raw material acquisition, the forest products companies and trade association representatives claim that no other government actions seriously hinder or promote their business activities. People commented on their flexibility to manage personnel without interference. One policy that was mentioned as a useful tool to promote the wood products business is the Regimen de Importación Temporal (RIT). RIT exempts the tax on any import product provided that the tax-exempt item is used to make an export product.

3. The Forest Products Industry

Products created from trees can be categorized by whether they are made directly (primary) from a log (e.g. lumber and veneer) or whether they are the result of further processing (secondary) (e.g. furniture, fences, broom sticks, etc.). Of the primary products from Honduran forests, lumber is by far the most important with veneer and posts far behind. Of the veneer made in Honduras, virtually all of it goes toward domestic furniture production and eventually exported. Only two companies, Honduras Plywood and Plywood Atlántida S.A., produce veneer. The veneer in turn becomes an upstream product for domestic plywood production. Although a modest amount of plywood finds its way into the construction market for paneling and other nonstructural applications, the vast majority is used for furniture manufacture. The amounts of plywood production in the years between 1986-1992 are depicted in Figure 2.

The production of posts, which go to making fences, has been volatile over the past decade. In the best year (1989), the export revenue generated from posts was \$US494,000. In 1990, export sales were negligible (\$US8,000).

4. Lumber

By far the most important primary forest product is dimension lumber. This product accounts for over 90% percent of the total volume of Honduran forest products. Since 1986, the production volume has remained relatively constant (see Figure 3). However, lumber exports have been decreasing in both material volume and dollar value throughout this time (Figures 3 and 4). This is due to the fact that an increasing amount of domestic lumber production is being processed into secondary products aimed at export markets. Figures 4 and 5 show recent trends in the value of lumber and secondary forest products exports, respectively.

The large majority of the material is pine cut from homogeneous stands found mostly in the west and central parts of the country. A relatively small, but growing, hardwood lumber market exists as well. From estimates provided by COHDEFOR staff, when the number of forest products companies was approximately 250, 8-10 were large

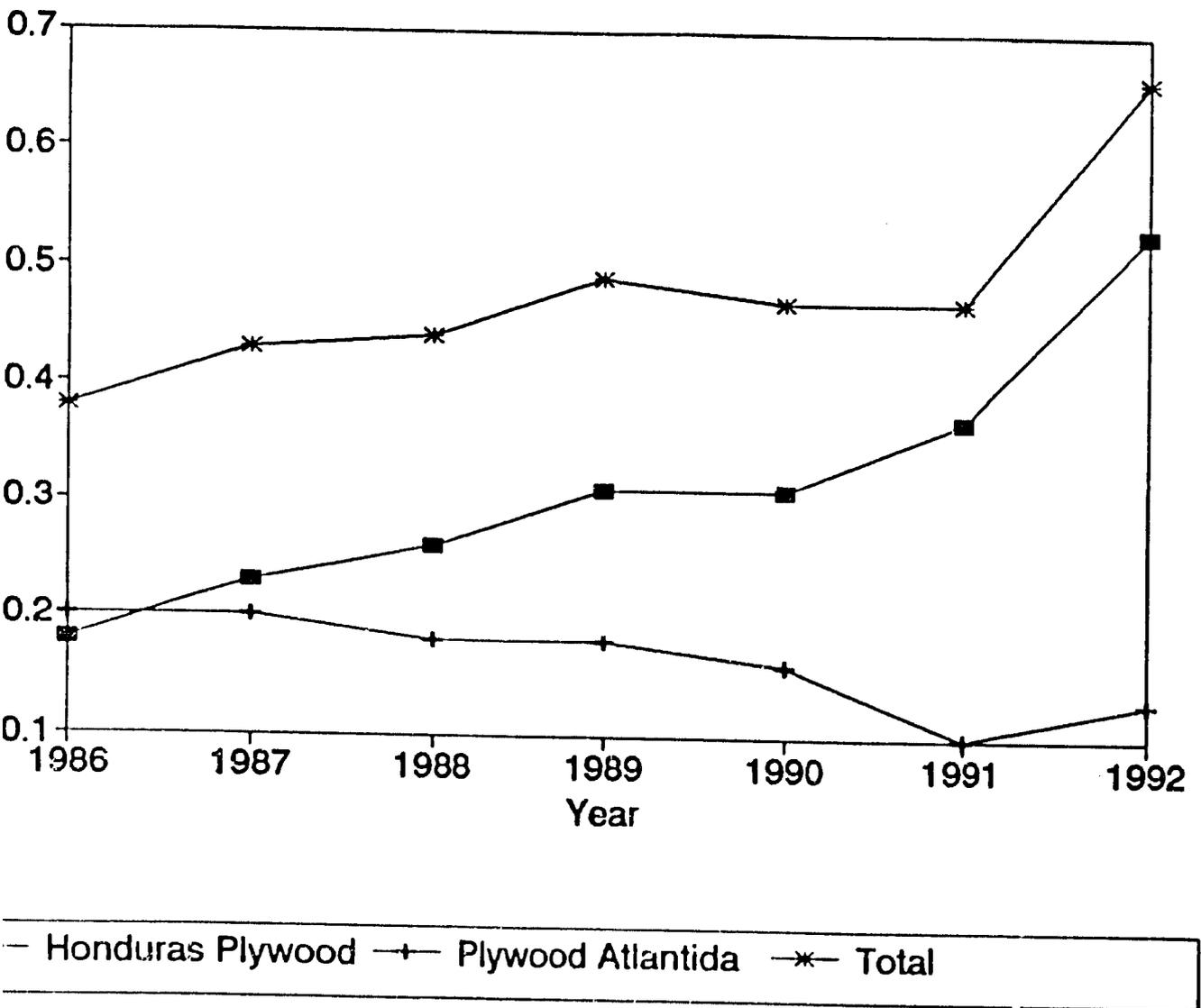


Figure 2. Plywood production in Honduras between 1985-1992.

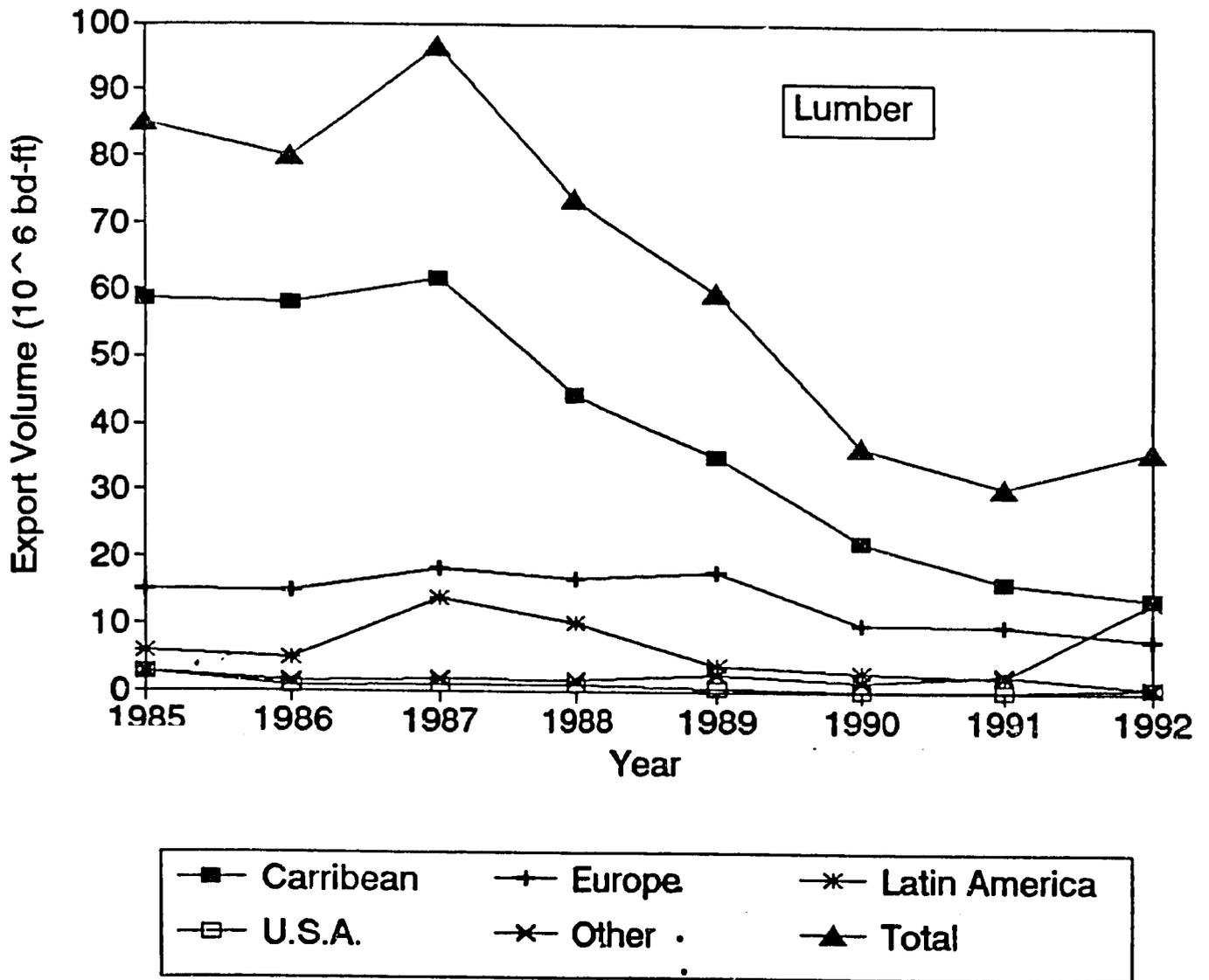


Figure 3. Export volume of lumber by geographic distribution between 1985-1992.

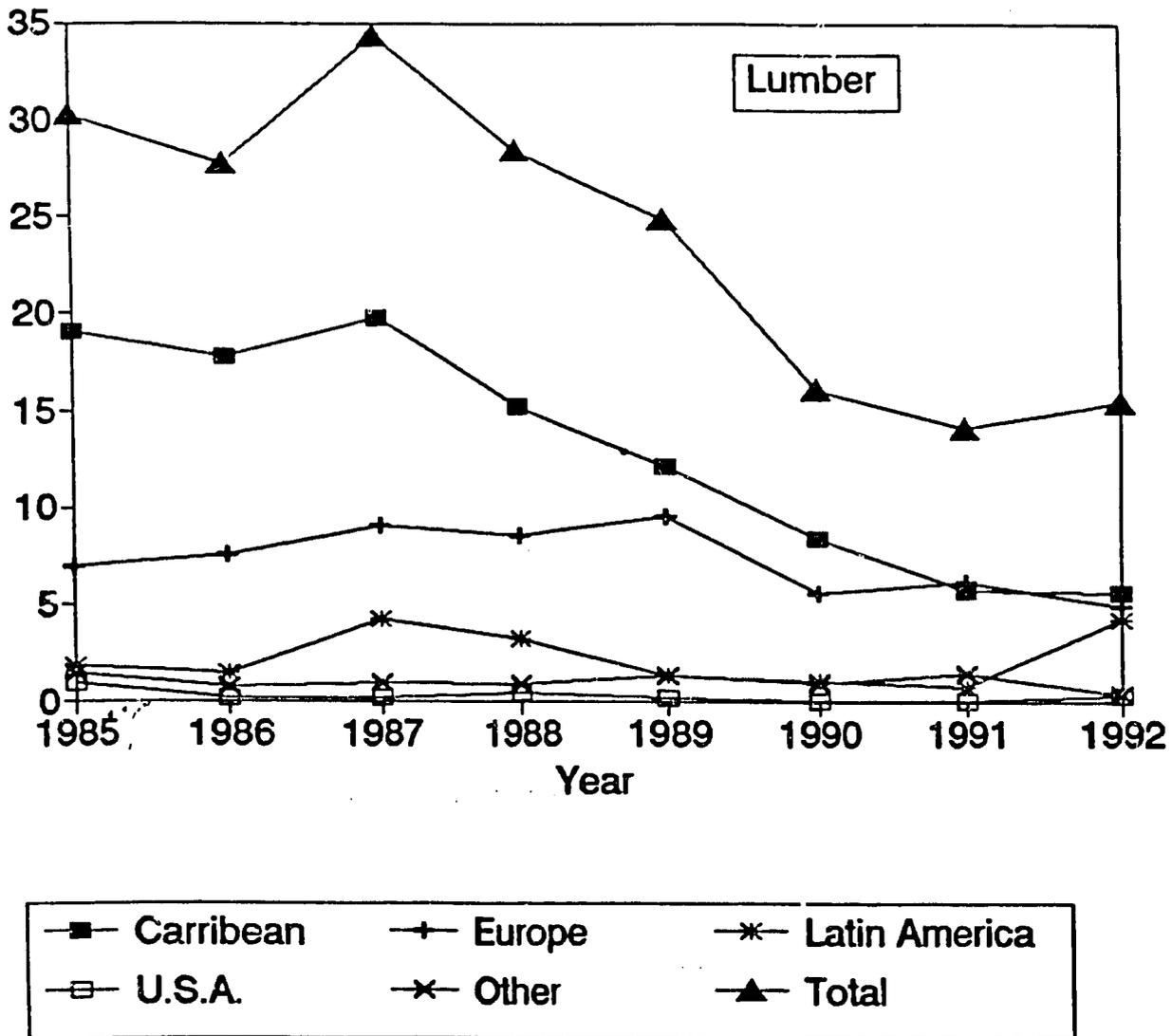


Figure 4. Export value of lumber by geographic distribution between 1985-1992.

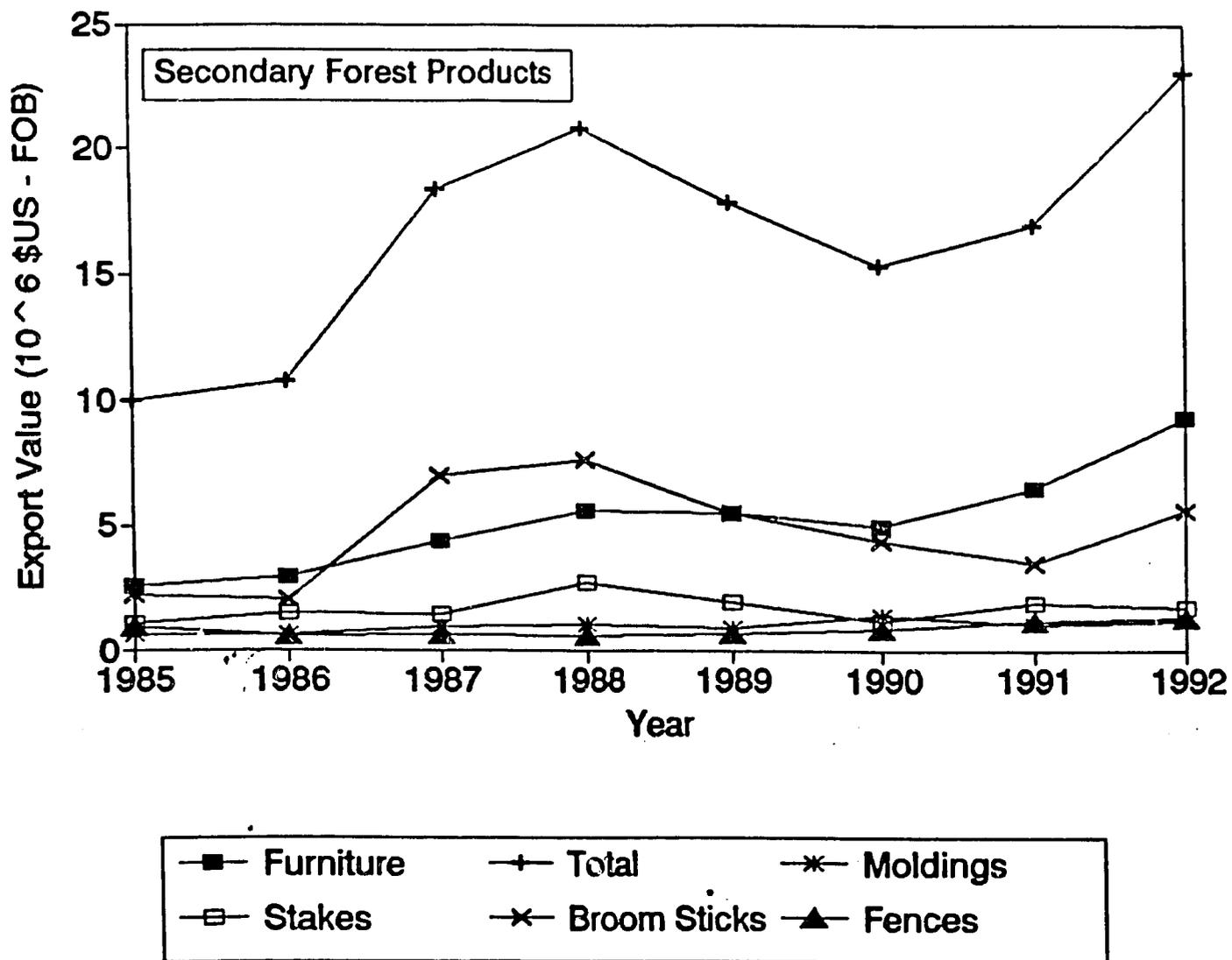


Figure 5. Export value of certain secondary forest products between 1985 and 1992.

companies mostly financed by foreign investment, about 50 were of an intermediate size and the remainder were small. USAID statistics reveal that of the 120-140 sawmills in service, 86% of the dimension lumber comes from about 50 manufacturers with the seven largest mills producing half of the total output.

5. Secondary Products

In addition to lumber, a number of commercial and noncommercial products emanate from the forest. Although there are many products that are generating export receipts, it is important to note that the single largest use of wood in Honduras is for firewood used in cooking. Since wood as a fuel is perhaps the least efficient utilization of the material, the collection of fuelwood is one of the largest contributors to national deforestation.

A number of important wood products are produced in Honduras for export. Among these are: moldings and finished carpentry products, tomato stakes, broom sticks, fences, lobster traps, and furniture. Figures 6 and 7 show the volumes and dollar values for key secondary forest products, respectively. From these figures, several important facts are evident. First, value-added products are becoming increasingly important in the export area. This is illustrated by a 130% increase in export value from 1985 to 1992. Second, virtually every product has experienced gains throughout the previously mentioned period. Third, furniture has been the greatest source of revenue, while using a relatively small amount of material. Therefore, furniture is the product which extracts the most value per volume of wood. More recent information reveals that for export to the U.S., Honduras' furniture exports for the first quarter of 1993 exceeded \$US4,000,000 for the first time. Projects for the same period in 1994 reveal that furniture exports to the U.S. will be \$US5,200,000. This represents about 20% of all furniture imports to the U.S. from countries south of Mexico.

6. Lumber in Construction

By both weight and volume, more wood products are used in the U.S. and Canadian construction than all other building materials combined. Given the substantial forest resource, especially pine, in Honduras, it is natural to enquire about its importance in this market. Although wood is the building material of choice for most of North America, in many parts of the world, wood is grossly underutilized. Observation of Honduran construction practices and conversations with builders reveal that wood has captured almost none of the construction market (neither residential, commercial, or industrial).

Two primary reasons account for this lack of utilization. First, the economics of wood make it quite unattractive relative to concrete. In recent years, the price of lumber in the free market has risen substantially due to the removal of government price controls and competition with the secondary forest products sector. Therefore, timber

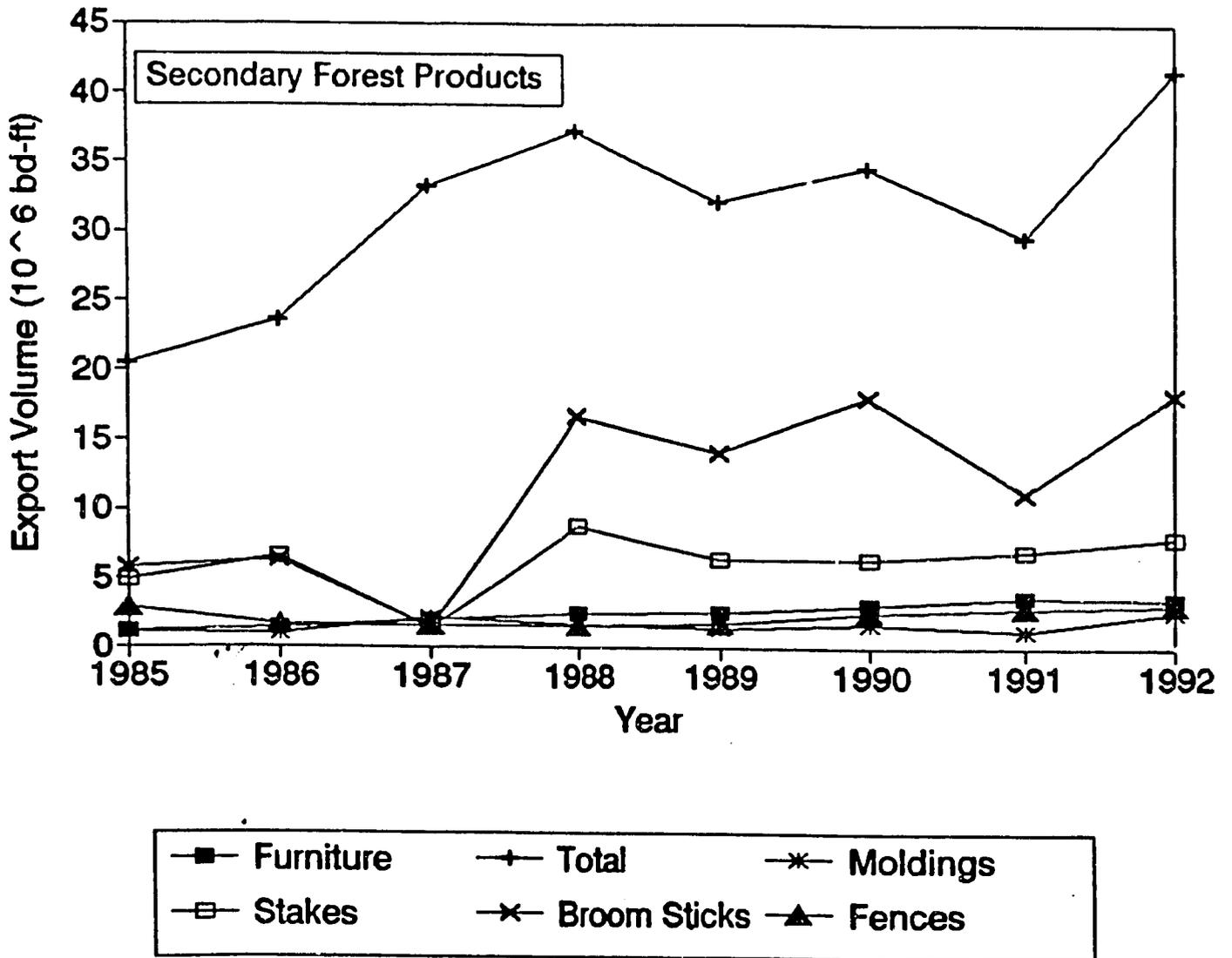


Figure 6. Export volume of certain secondary forest products between 1985 and 1992.

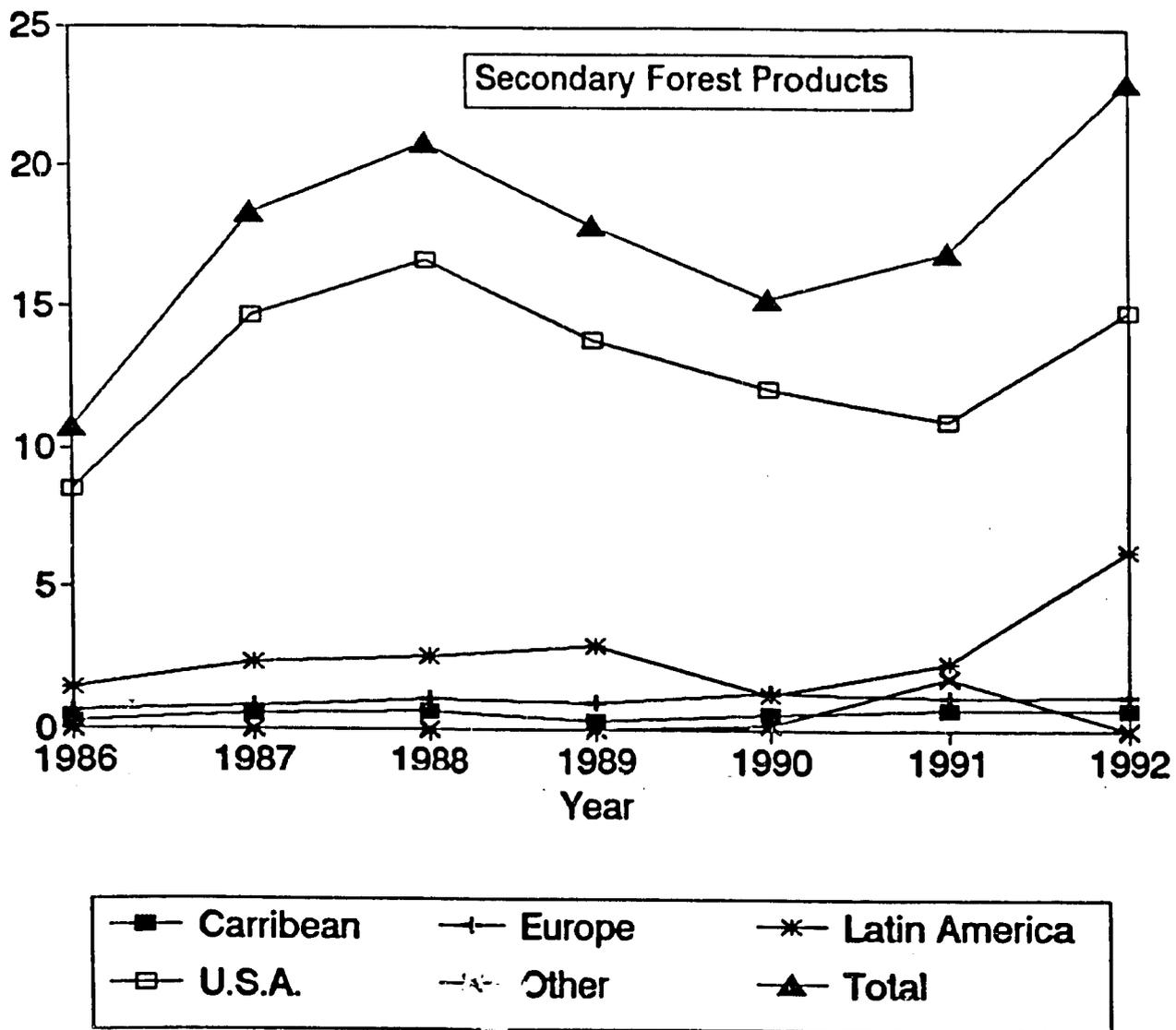


Figure 7. Export value of certain secondary forest products by geographic distribution between 1985 and 1992.

construction is quite expensive. Second, and in some respects more relevant, is the fact that the culture of the people lends them more toward concrete construction. As is the case in many lesser developed nations, wood housing is associated with dwellings occupied by the poorest people. As such, people feel stigmatized by living in wood.

7. Chemicals from Wood

It is currently estimated that nearly 3,000 products routinely used by society are derived at least in part from wood. One category of products are chemicals extracted from needles of pine trees of wood in general. Literature from COHDEFOR shows that limited data exist regarding the production levels of several chemicals (crude resin, rosin, liquidambar, turpentine, pine oil, dipentenol, and sinzol). Figure 8 shows the export income derived from three chemicals for which continuous data exists between the years of 1985 to 1992. The trend indicates that the income generated from these products is somewhat irregular, and that the behavior of rosin drives the entire industry. Throughout the interview process, no interviewee was particularly knowledgeable about this industry or had any direct involvement with chemical production. Therefore, no recommendations regarding needs in this industry will be presented.

8. Upstream-Downstream Linkages

Most of the larger wood products companies begin product development from the source, that being forest operations (harvesting). They then use their own transportation systems to get logs to the mill, make their own lumber or veneer, and produce a finished product. In these cases, external support needed to create a finished product may include machines for processing, heavy equipment for transportation and harvesting operations, and high quality and appearance connectors for use in furniture manufacture. All of these products are obtained from foreign suppliers.

Many of the larger companies export directly to customers abroad. They participate in international trade shows to make direct contacts with potential customers. Smaller companies will require the services of independent loggers to assist in material acquisition and transportation. Furthermore, they will also work with independent import/export agents to sell their products abroad.

D. Description of the Labor Force

1. Labor Force - Size

Companies which constitute the Honduran forest products sector is a group diverse in size, location, a product range. Precise data regarding the number of people employed in this area is difficult to determine. However, data was provided by the Asociación Nacional de Empresas Transformadores de la Madera (ANETRAMA), a

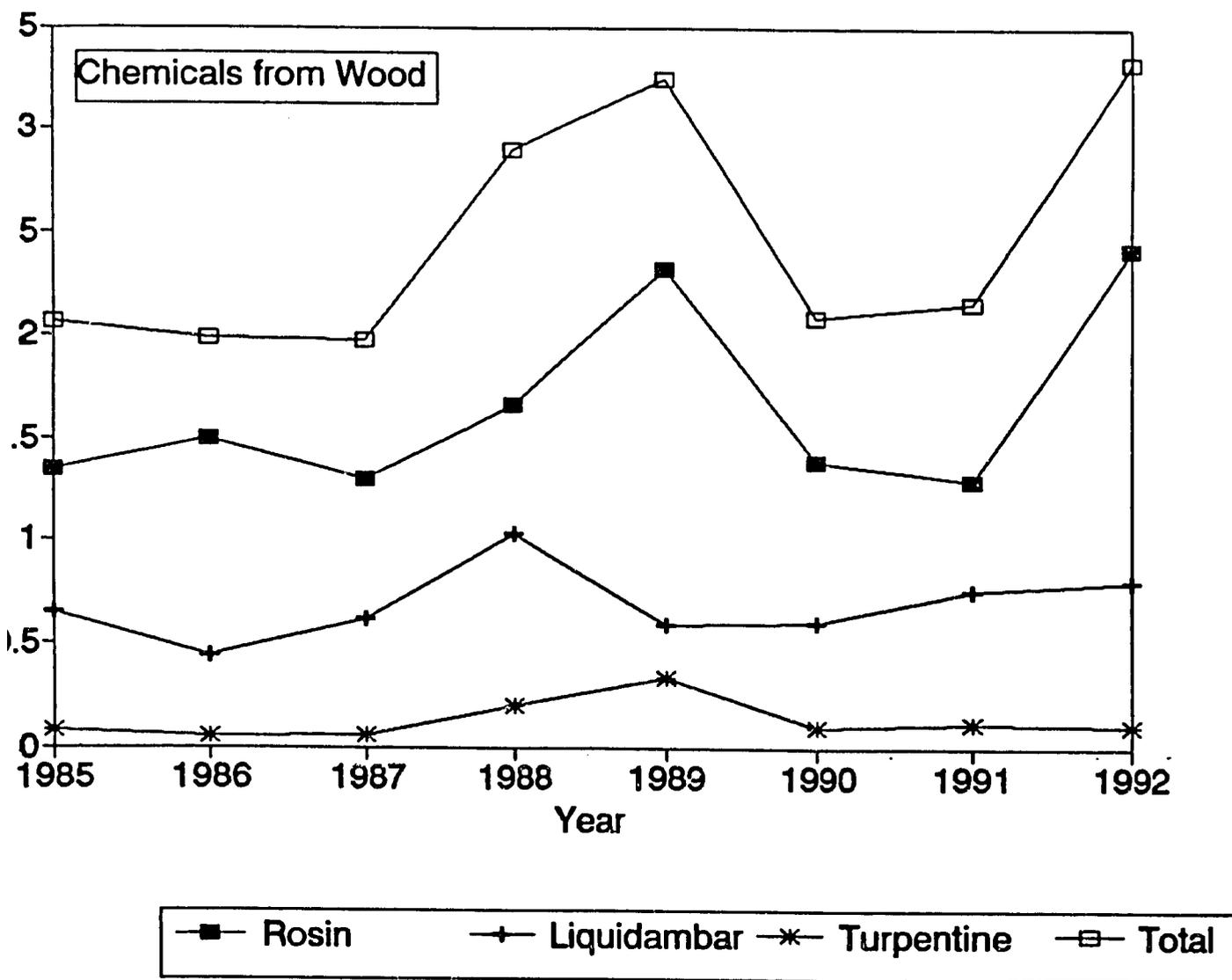


Figure 8. Export value of chemicals derived from wood between 1985 and 1992.

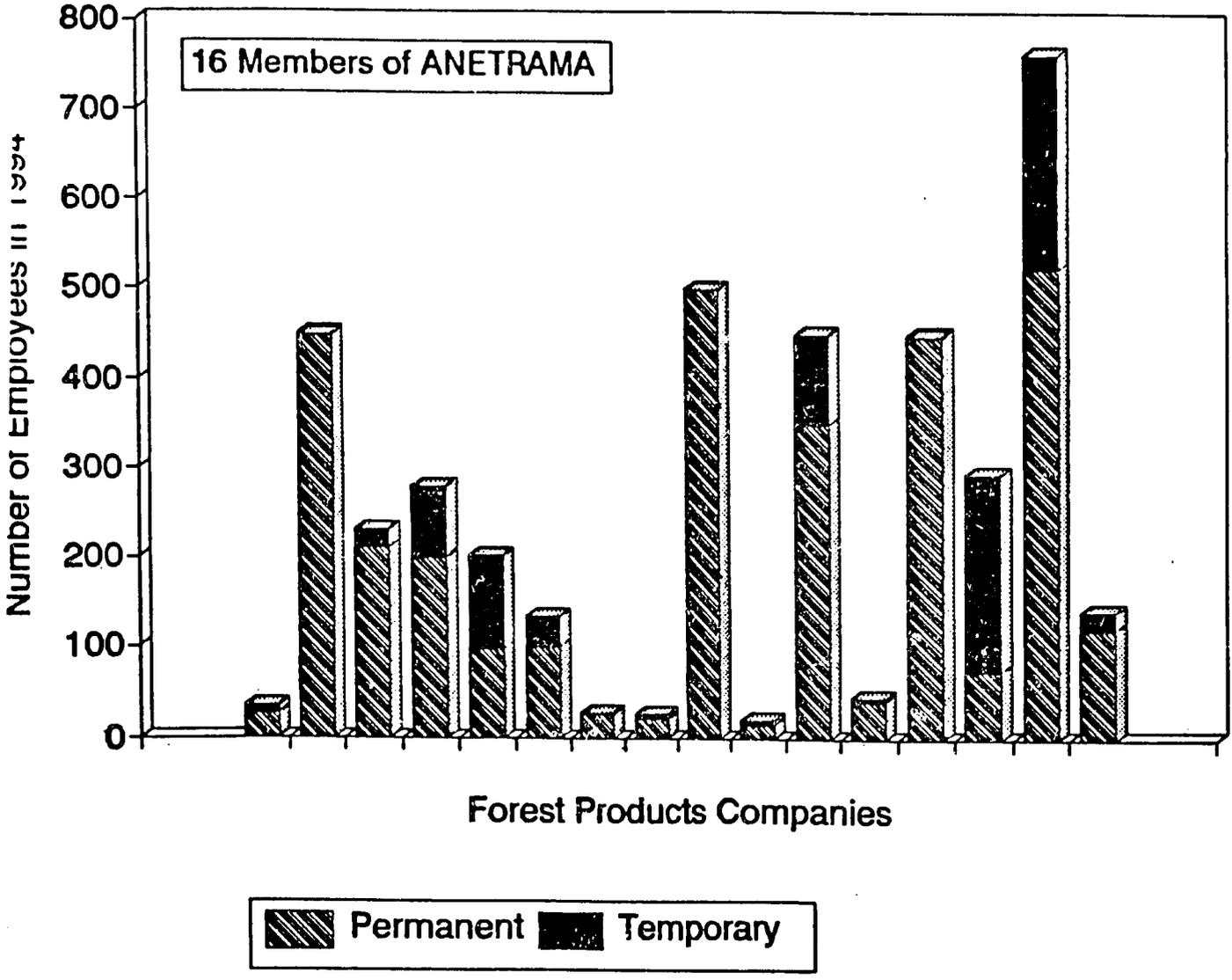


Figure 9. Number of permanent and temporary employees in 16 companies responding to a questionnaire.

trade association representing producers of secondary wood products (primarily plywood and furniture), which came from a survey of their membership. Of the 43 companies comprising the association, data from 16 respondents were available. Figure 9 illustrates the number of permanent and temporary employees for each company. This figure reveals that 3202 permanent and 851 temporary employees (4053 total) work for the 16 companies represented. Conservatively assuming that this number represents half of the employees of ANETRAMA-member companies, then an estimate of about 6400 permanent and 1700 temporary employees is rational. Furthermore, the ANETRAMA director estimated that not all of the secondary forest products manufacturers are members of the association.

In addition to a substantial secondary industry, there is also a large primary industry which produces nearly 1,000,000 cubic meters of lumber and veneer annually. This value was provided by the primary wood products trade association, Asociación Madereros de Honduras. There are 56 dues-paying members in the association, a number that may represent as little as one-third of all primary producers in Honduras. In an interview with a private consultant and former-COHDEFOR employee, the entire forest products sector was estimated to employ approximately 50,000 people. Though not rigorously documented, this number seems reasonable from the limited empirical and anecdotal information acquired in the study.

2. Labor Force - Education

The Honduran forest products industry operates at a very low technology level. As such, much of the production is conducted manually with a large number of repetitive tasks being conducted. Therefore, there are opportunities for people who have only the most marginal levels of formal education. All of the employers interviewed said that the vast number of workers in their company had not completed primary education. A modest number of employees had completed some or all of their secondary education. These people were usually in supervisory or administrative positions. The number of university trained employees is very small and found only in the largest of the companies. These people were most often production engineers. Their responsibilities were related to production technology and quality control.

3. Labor Force - Gender Mix

The number of women employed in the forest products sector does not reflect their numbers in the general workforce. Women employed in any particular company is dependent upon the physical demands of the job. In a typical furniture factory, women were found doing finishing, upholstery, and clerical activities.

Most employers said that they liked having women employees, whose performance was marked by diligence, a favorable work ethic, punctuality, and willingness to work overtime. Regrettably, it is felt that the impoverished social conditions faced by women

(raising children alone, lack of child care, etc.) creates a dependence on the job for the daily survival for herself and her children. Because of their dependent situation, women often work for lower wages and experience serious impediments to upward economic mobility.

4. Labor Force - Turnover

The turnover rate is highly variable throughout the industry. Anecdotal evidence indicates that the more laborers are paid, turnover becomes less of a problem. However, for companies that pay less (as little as 26 Lempiras/day), employers can obtain new workers with such ease that they do not have concerns about turnover.

There is some concern regarding the loss of trained workers at some companies. They claim that finding replacements is often difficult and time consuming because of the time needed to train a new person on the job. The lack of a trained pool of potential workers does not allow for fluidity in the skilled worker market.

5. Labor Force - Employment Levels

Employers were asked about their plans for company expansion. Employers said that in spite of the obvious constraints on their industry (material supply, quality, productivity), they were optimistic about the future. However, one employer who recently went through a period of growth in labor force and physical infrastructure said that he was not going to add any new workers or buildings to his company. Instead their plan was to increase efficiency and productivity with the human and physical resources that were already in place.

E. Skills/Core Competency Requirements

In many cases, it was found that at the current levels of technology in the forest products industry, very little was expected of workers in terms of entry skills. People would be given modest tasks at first, usually working under someone's close supervision, then once they have had the required experience, would move up to a higher level. This was very much like the situation found in the construction industry, where a person who had served as the assistant to a tradesman (e.g. carpenter, brick layer, etc.) would eventually become a tradesman.

Even though the industry did not have serious problems with low level labor, some glaring shortcomings were found at the higher levels. Equipment maintenance was found to be below the level needed to optimize product quality. As an example, a principal of the Caterpillar Company (the distributor of chain saws for harvesting trees) said that for want of blade maintenance (sharpening), motors would prematurely burn out and precipitate the loss of a valuable piece of equipment.

Another common complaint heard from employers is that there are no people trained in the basics of wood technology. The comment is routinely heard by people in the furniture industry that there are no people who sufficiently understand the properties and behavior of wood to be able to recognize opportunities to make production more efficient and improve product quality. Currently, it is quite common that even the supervisory personnel do not have a sufficient understanding of wood as a material to improve production by suggesting operational modifications.

1. Industry Quality and Productivity

Several important facts are clear to forest products industry administrators. First among these is that exports will be the engine that drives the profitability of this sector. Exports in value-added products are already the force behind the success currently enjoyed by the industry. Second, to be successful in the international marketplace, quality must be sufficiently high to compete with more industrialized producers. Third, production efficiency must be improved to remain economically competitive. Fourth, high quality and high productivity cannot be simultaneously achieved with the current labor force.

Most of the larger producers of higher valued wood products claim that at the moment they are capable or increasing either product quality or product quantity. However, most attempts at increasing production result in a proportionate decrease in product quality. It is the opinion of most that the difficulties in optimizing company growth is a lack of trained people in the production and maintenance areas throughout all levels of the conversion process.

F. Education and Training System

In order to achieve increased penetration in foreign markets, while keeping product quality high and improving production efficiency, an increasing level of technology and trained personnel necessary to implement this technology will be needed. The labor force in the Honduran forest products sector not only does not have a reasonably high level of formal schooling, but lacks the necessary vocational training desired by employers.

There are a number of institutions which provide training to the wood products sector. Private schools, such as the Instituto Técnico Santa María (Episcopal), are owned and operated by Christian churches to provide a combination of basic and vocational education. The nature of the vocational training is in areas such as carpentry, electronics, automobile repair, and masonry. Organizations, such as CADERH and INFOP, are also involved in training for the sector. INFOP has courses in a wide variety of areas which have a relationship to wood utilization. However, the bulk of their training efforts relate to teaching crafts (similar to those taught at the private school

previously mentioned). At the National Forestry School (NFS) in Siquatepeque, formal courses are offered which lead to a technical diploma (something less than a university degree but more than a secondary education). The primary thrust of these programs is to produce people for employment in the forestry sector, not specifically the wood products area.

Throughout the interview process, no evidence was found that the forest products industry had any experience with graduates from the private vocational training centers, although placement rate among these schools is at 90%. The administrator at the Instituto Tecnico Santa Maria said that virtually all of his carpentry graduates (about six/year) work as carpenters in the construction sector. It is likely that the other private schools place their graduates in the smaller artisan woodshops and in the construction industry as well.

Employers claim that they have a large number of workers who have had some training by INFOP, and to a much lesser extent, at the National Forestry School. When asked if these institutions provided students with the knowledge and skills desired by employers, the answer was almost unanimously no. Employers claim that INFOP courses focus too much on the carpentry skills (like the private schools) and not enough on the processing of wood at the production level. However, one employer of a large furniture company claims that he likes workers who come from INFOP programs, not because they have useful knowledge and skills, but because a person who goes through the educational process has a certain degree of initiative and motivation which the employer finds attractive.

The industry found that INFOP courses were very good for what they do. For example, if students were taught carpentry skills, they were usually good carpenters. However, there were complaints about the administration of INFOP programs and about organizational sensitivity to industry needs. For example, one employer desired that one of his workers take a sequence of three short courses in the autumn of the year. However, the three courses were sequential and needed to be offered in the correct order. INFOP's offerings in that autumn were out of sequence, so the student would need perhaps an entire year to take three short courses.

The employers interviewed in this study had much less experience with the NFS graduates. However, it appears that the orientation of the NFS's programs is in the area of forestry management. Therefore, these students are trained in the areas of silvicultural technology and forest measurements. None of these are of particular interest to the wood products industry.

In Zamarano, there exists a university which serves as a Central American center for agricultural education and research which offers programs in Forestry. Although the quality of education offered at this institution is highly regarded by those familiar with its programs, this institution does not address the needs of the wood products sector.

Currently, there are several other forest-related development projects being conducted in Honduras by agencies from Canada and Europe. The German, Canadian and Finnish efforts do not appear to be directed at the forest products sector. A British effort to develop a center on a two-ha. parcel of land near Tegucigalpa is aimed at addressing timely needs of the forest products sector. The Centro de Utilización y Promoción de Productos Forestales (CUPROFOR) will be designed to provide technical services to the forest products sector (e.g. equipment and saw blade maintenance, drying, etc.). In addition, CUPROFOR will help develop technology with the aim of efficiently utilizing the numerous and diverse hardwoods indigenous to Honduras. Training does not appear to be in their mandate, though a conversation with the director revealed that they would be interested in participating with other organizations in training. Furthermore, their facilities will have conference rooms that could serve as a venue for short courses and workshops.

The overwhelming majority of the employers interviewed were of the opinion that if their sector is to advance to higher levels of production, quality, and efficiency, more highly trained personnel would be needed. Their feeling was that people trained as carpenters would not satisfy their future needs. They felt that people with an understanding of wood as a raw material, processing, and its behavior in end uses would be vital. Furthermore, people with an understanding of machinery (not automobile motors) would be congruent with industry needs.

Wood industry employers were very clear that they would be willing to work with any educational or training institution. However, they insist that the institution delivering the product be sensitive to the needs and desires of the industry.

1. Informal Training Programs in the Forest Products Sector

It is apparent that the forest products industry is dissatisfied with the available formal training programs. Therefore, they have opted for a variety of in-house instruction. This may consist of the most experienced person in an operation instructing the lesser experienced workers on some aspect of production. In addition, some companies will hire foreign experts to come to their facility for several days and conduct a workshop. Recently, several companies have become involved with programs aimed to bring retired U.S. trainers who are knowledgeable with respect to forest products to Honduras for periods up to one month. They volunteer their time to teach workers useful skills and knowledge, and are paid for their per diem expenses.

In the forest products sector, there exists a large number of labor needs. Among these are people who are skilled in felling trees and forest operations in general. It is often the case that damage incurred by the tree during felling will manifest itself as either damage to the resulting product or loss of material. In either case, improper tree felling results in a financial loss. Proper forest techniques can optimize the return on each log taken from the forest.

At the production level, people knowledgeable about raw material and the associated processes (cutting, planing, drying, grading, etc.) are vital to improve quality and production and adapt to a changing technological environment. Therefore, a work force with an understanding of wood technology concepts is desirable. This is also useful for people in supervisory and management positions.

A growing forest products industry will rely on the functioning of more sophisticated equipment. To optimize the investment on this equipment, proper preventive maintenance and timely repair when inoperative are necessary. The industry is currently suffering from a severe shortage of qualified people who understand the working of machines used in industry.

Interviews revealed that for some companies it is difficult to determine the levels of profitability of the company over periods of 2-3 months. Managers trained in the concepts of cost accounting and using the appropriate software would be able to allow the company to calibrate its operations in response to short term business trends.

G. Human Resource Constraints

Human resources are invaluable to the growth and prosperity of an industry. In the forest products sector, there exists a large number of labor needs. Among these are people who are skilled in felling trees and forest operations in general. It is often the case that damage incurred by the tree during felling will manifest itself as either damage to the resulting product or loss of material. In either case, improper tree felling results in a financial loss. Proper forest techniques can optimize the return on each log taken from the forest.

At the production level, people knowledgeable with regard to the raw material and the associated processes (cutting, planing, drying, grading, etc.) are vital to improve quality and production and adapt to a changing technological environment. Therefore, a work force with an understanding of wood technology concepts is desirable. This is also useful for people in supervisory and management positions.

A productive, growing, and vital forest products industry will rely on the functioning of more sophisticated equipment. To optimize the investment on this equipment, proper preventive maintenance and timely repair when inoperative are necessary. The industry is currently suffering from a severe shortage of qualified people who understand the working of machines used in industry. More highly trained machine maintenance personnel will be basic to a thriving industry.

It is commonly perceived that the supervisory and administrative personnel found in Honduran forest products facilities often lack the understanding of the material and production techniques to efficiently create quality products. In addition, there exists a

lack of ability to manage people in a technical production environment.

Interviews revealed that for some companies with numerous source of inward and outward cash flow, it is difficult to determine the levels of profitability of the company over periods of 2-3 months. Managers trained in the concepts of cost accounting and using the appropriate accounting techniques would be able to allow the company to calibrate its operations in response to short term business trends.

Therefore, in summary, the needs most frequently identified for labor in the Honduran forest products industry are:

- Workers capable of running sophisticated machinery in wood products production needed to create quality products and keep productivity high
- Workers knowledgeable of wood technology (i.e. basic properties, drying, gluing and finishing, machining, process, raw material conversion, quality control, forest operations)
- Workers able to do preventive maintenance on the increasingly complex equipment used in wood products production
- Managers and supervisors capable of interacting with workers to maximize productivity
- Management trained in cost accounting techniques to determine company performance over a short time frame

H. Processing Requirements for the Manufacture of Key Forest Products

Table 1 contains the basic processing steps required to manufacture forest products. With this table and the personnel needs defined in the previous sections, the reader can put in context the course recommendations given in a subsequent section.

I. Training Needs in the Forest Products Sector

The list of areas to be covered in a training program for the forest products sector in Honduras is described in Table 2. These recommendations reflect the training needs of a more production-oriented forest products industry. In particular, the thinking surrounding the development of Table 2 primarily related to the manufacture of furniture for export. For the production of secondary products with lesser potential for economic impact, certain subsets of these subject areas would be useful.

Of course, for the development of artisan skills, numerous programs from CADERH, INFOP, and other schools and centers are currently available.

Table 1.

Flow chart of the critical processing steps for making lumber, plywood, and furniture.

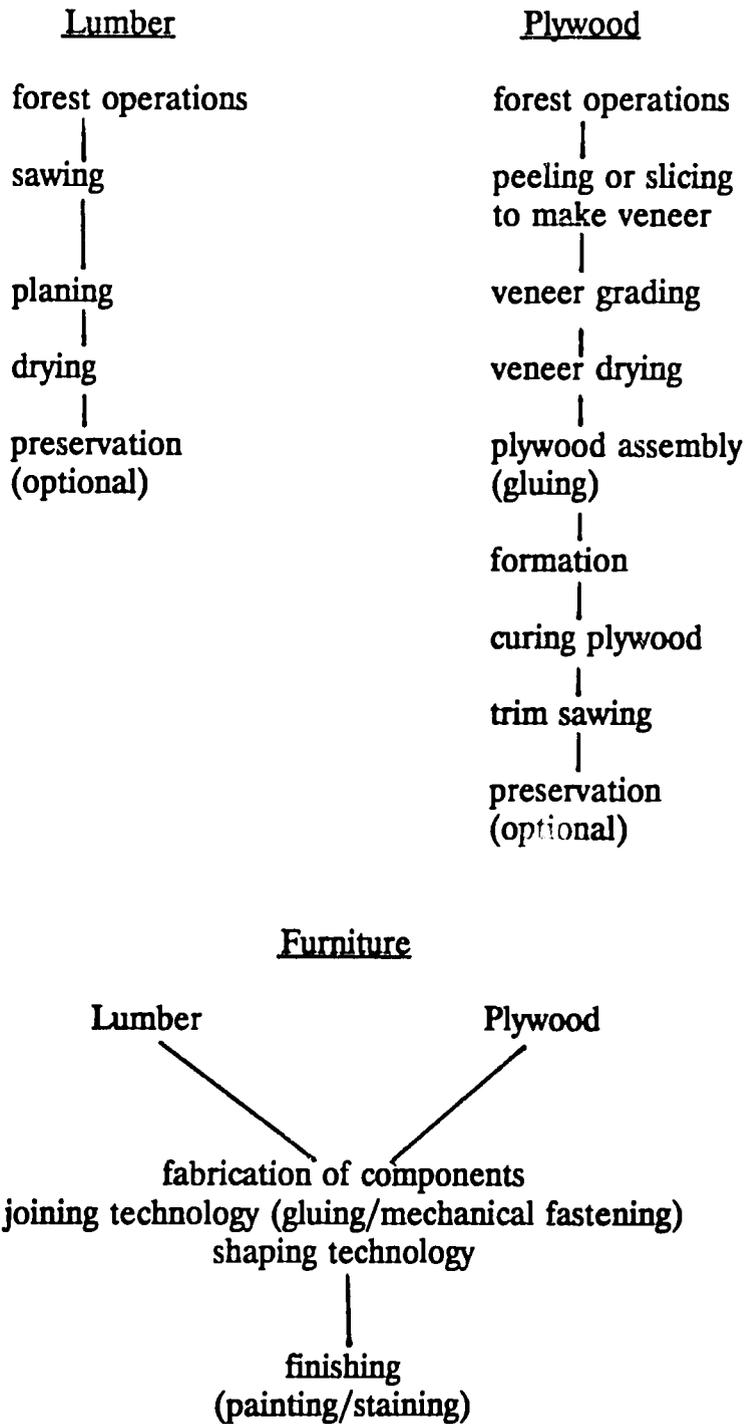


Table 2.
Subject matter to be cover in a training program for the
production of forest products (furniture).

- **Forest Operations**
 - chain saw and other equipment use and maintenance (safety)
 - felling procedures (sensitivity for environmental impact)
 - log bucking and trimming
 - log transportation
 - safety

- **Basic Properties of Wood**
 - basic structure
 - grain orientation
 - density issues
 - variability

- **Relationship between Wood and Water**
 - how wood reacts to water
 - shrinking/swelling
 - drying of wood (air, conventional, high-temperature, solar)
 - drying degradation (warp, checking)
 - how water affects other processes (cutting, gluing, finishing)

- **Machining of Wood (at the practical level)**
 - sawing wood (circular, band, other)
 - planing and surfacing
 - specialty machining (e.g. routing)

- **Surface Properties of Wood (at the practical level)**
 - gluing, finishing

- **Production Technology**
 - issues surrounding individual products (relationship of properties to end-use), their end uses, and forest products manufacturing equipment (saw, planers, presses, joiners, etc). what they do and how
 - production details
 - processing components and their interaction
 - measurements
 - tolerances
 - quality control (higher level)

- **Industrial Maintenance**
 - saw blade (band, circular) sharpening and maintenance
 - specialty tool care and maintenance
 - maintenance issues related to forest products equipment
 - repair
- **Human Relations and Management Skills**
 - improve productivity through effective management and interpersonal communication
 - worker motivation
 - cost accounting

CHAPTER V. INDUSTRIAL MAINTENANCE

A. Objective

"Identify labor force requirements in terms of quantity, quality, and type of manpower for this trade to effectively support the industrial sector."

B. Description of the Industrial Maintenance Trade

The industrial maintenance trade performs three main functions:

- Preventive Maintenance;
- Corrective Maintenance; and,
- Predictive Maintenance.

In Honduras, this labor force is mostly dedicated to corrective maintenance (repair) of industrial machinery. Most industrial equipment in Honduras was installed during the 60's and 70's although there is a significant number of state-of-the art equipment. UNIDO estimates that 70% of the installed equipment in small companies was purchased used [Farrant 1992]. This wide range of equipment ages forces all training programs in the country to cover older technology.

This labor force is divided into four groups in the typical Honduran industrial setting:

- Semi-qualified workers, called "helpers";
- Qualified workers, electricians or mechanics. This group also includes machine operators in small companies;
- Senior Technicians (mechanic, electric, electronic, welding); and,
- Engineers, mechanical, electrical, and industrial.

Training for this trade comes from several formal and non-formal institutions in three main areas:

- Metal working, operation and maintenance of electro-mechanical equipment and products, and welding;
- Electric and electronic systems, machines and products;
- Automotive repair and maintenance, including repair and maintenance of construction and agriculture equipment.

Table 1 shows that there is a large number of Hondurans working in the industrial maintenance area and that 94.7% of them are at or below a high school education level.

Table 1
EDUCATIONAL PROFILE OF EMPLOYED WORKFORCE
IN TARGETED SECTORS
(1992)

Education	Construction*	Wood Products **	Tourism***	Industrial Maint. ****
None	15.6%	3.0%	12.0%	3.1%
Primary Incomplete	36.9%	13.3%	36.8%	20.9%
Primary Complete	32.8%	27.5%	26.3%	36.8%
Secondary Incomplete	7.5%	12.0%	13.2%	23.2%
Secondary Complete	2.6%	18.8%	9.4%	10.7%
University Incomplete	2.5%	7.5%	.6%	1.9%
Complete University	2.0%	18.2%	1.7%	3.5%
Total	69,939	2,289	30,277	58,873

The industrial maintenance occupations considered in Table 1 included operators of small manufacturing equipment as suggested during interviews and in the reviewed documents [Zelaya, 1994a]. This dual role of operator and maintenance person seems to occur in small industrial operations (19 or fewer employees) where there are none or few maintenance employees. This can be a considerable portion of the labor force since current estimates by UNIDO and "Asociación de Pequeños Industriales" indicate that 80% of the national employment comes from small companies.

C. Tasks Performed and Assessment Methodology

This assessment was carried out by performing the tasks required by the contract, executing a qualitative analysis of supply and demand of trained workers in this trade and by conduction interviews with key people in industry and training institutions. A survey instrument (Attached) was used to collect most of the demand side data.

The supply side was evaluated by reviewing course contents of current industrial maintenance programs, and by interviewing instructors and employers.

D. Prior Assessment Work

No prior work was found regarding industrial maintenance training requirements for Honduras [Zelaya, 1994a]. However, the following documents were found to contain relevant information:

1. Investigación en el Area de Mantenimiento Industrial, [Zelaya 1994a].
2. Proyecto de Investigación de Necesidades de Capacitación de la fuerza Laboral en: Mantenimiento Industrial, [Zelaya 1994b].
3. Programa de Auto-Evaluación para Facilitar un Proceso de Reestructuración del Proceso Productivo, [ONUDI 1994b].
4. Addressing Employment Needs: A Study of the Training System in Honduras, [Kelly 1984].
5. Informe Estadístico 1993 - Instituto Nacional de Formación Profesional, [INFOP 1994c].
6. Instrucción Vocacional en Honduras: Programas de Capacitación Industrial, Artesanal y de Computación, [USAID/CADERH 1984].
7. Area Industrial: Programa Maestro de Taller, [INFOP 1993b].
8. Propuesta del Proyecto del Centro de Capacitación de Equipo Pesado y de la Construcción (CCEIN) [INFOP 1994].
9. Program de Capacitación, [ONUDI 1994a].
10. Rama Metal-Mecánica, [INFOP 1993b].
11. Informe Sobre la Industria Metal Mecánica en Honduras, [Farrant 1992].
12. Human Resource Development Program, [Salomon 1990].
13. Identification of Honduras' Training Needs from the Period 1990-1999 and the Development of a Training Strategy and Model Development Training Project, [Muñoz et al., 1988].

E. Assessment of the Demand Side

Prior to arriving in Honduras, a list of typical industrial systems, processes, and equipment that require maintenance was created (see Table 2). Table 3 gives typical core competency requirements for the systems in Table 2, which were also specified a priori and updated using the data collected from the interviews summarized in Table 4. Core competencies for the metal mechanical sector were found to coincide with those identified by UNIDO [ONUDI 1993, 1994].

The core competencies specified for Electronics, Electrical, Electrical Wiring, Refrigeration, Maintenance Management and Metal Mechanics areas are the main ones needed by the manufacturing industrial sector. Other core competencies listed in Table 3 are only important to their respective industrial sectors.

Minimal prerequisites before receiving the core competencies indicated in Table 3 include solid high school mathematics (trigonometry, algebra, numbering systems, systems of equations, matrices and determinants) and physics (velocity, acceleration, force, impulse, electromagnetic fields, basic electric circuits, electric networks, power, energy and work). These requirements are strongly needed for the Electrical and Electronics core competency needs.

Table 2 - Typical Industrial Systems and Equipment

Typical Processes/Systems/Equipment Requiring Industrial Maintenance

Process equipment

- Material handling Equip. (conveyors, elev.)
- Loading Deck. Equip./ Doors (lift truck, etc.)
- Storage equip. (racks, shelving)
- high voltage, AC systems
- Fastening, joining, welding
- pollution monitoring & control
- Mechanical power transmission
- Fluid power transmission (hydraulic systems)
- Piping, valves (MOV's), connectors
- Pumps, compressors
- Elec. motors and associated controls
- Lubricants, adhesives, sealants
- Electric/Electronic process control systems
- Computer hardware
- Numerical control machining (computer numerical control - CNC)
- Pressure piping

Tool/equipment repair

- Lathes, drills, etc.
- ladders, scaffolding, platforms
- hand electric tools
- hand pneumatic tools
- hydraulic tools

Calibration and testing equipment

- Measurement and gauging instruments

In-plant transportation

- Internal Combustion (gas or diesel) engine vehicles
- Gas powered vehicles
- Electric power vehicles
- Automotive Diagnosing equipment

Buildings

- grounds maintenance
- portable in-plant buildings
- Roofing and insulation
- Flooring
- lighting
- Paints and coatings
- In-plant training equipment

F. Demand Side Data Collection Instrument

The data collection instrument proposed by Zelaya et al, 1994a, was expanded to collect information about particular systems and equipment used at each data collection site. The instrument was also modified to collect data about the annual investment in industrial maintenance (mostly for spare parts and outside services) and qualitative data about equipment ages.

G. Demand Side Assessment

Eleven industrial sites were evaluated using the data collection instrument. The site visits were arranged with the help of Peace Scholars, The National Association of Industrialists (ANDI), the Chamber of Commerce of Tegucigalpa (FEDECAMARA), COHEP, and the National Institute for Professional Training (INFOP). A list of persons interviewed and sites visited is attached.

Table 4 summarizes most of the data collected. As indicated above this sample size is too small to draw any statistically supported conclusions or observations. One recommendation below addresses the need for a more robust data collection project. Some qualitative observations from Table 4 include:

- The companies visited were medium to large in size and employed only males for maintenance positions.
- Four companies (36%) were located in San Pedro Sula and the rest in the Tegucigalpa area.
- Maintenance employees represented from 2 to 12% of the total company head count.
- Most maintenance workers were in their early 20's and mostly had an incomplete technical high school training plus other vocational courses.
- Wages are considerably higher in the San Pedro Sula than in Tegucigalpa.
- Wages for technicians are mostly half that of their supervisors.
- Maintenance technicians averages 6 years of service in their positions while supervisors average 12 years of service.
- 55% of the companies expect to open new maintenance positions within the next 3 years (from 1 to 10 each).
- 82% of the sites has a parts storage area.
- Most sites report investing from L250,000 to L5,000,000 annually in parts and external maintenance services.

Other survey data collected (questions 15 - 20, 24, 27, and 28) are summarized below:

1. Education or training received

The current industrial maintenance labor force has been trained by a combination of institutions. The following is a list of the typical training courses received:

- Basic Electricity, use and repair of compressors
- Measurement, heat treatment, technical drawing, metal machinery, automotive repair
- Control systems, lubrication
- Total Quality Management (TQM)

Training has been mainly received from INFOP (2.5 yrs programs in metal-mechanic, apparel mechanic, welding, electrical and electronics and other short programs) and from public technical high schools. CADERH short courses (24 hrs) were also mentioned. Several companies reported using equipment installation technicians to train their maintenance personnel. Other sites reported sending their technicians to manufacturer's training facilities (usually abroad) or developing their own in-house training programs. Most sites reported that their management level maintenance personnel had a university degree and in several cases it was received from a university in the U.S.

2. Education or Training Needed

All sites indicated their willingness to further train their personnel. Specific training courses mentioned include:

- Preventive maintenance planning and implementation practices
- Measurement Tools and instrumentation
- Bench power tools
- Numerical control machines
- Electronics, electronic systems
- Trouble shooting techniques
- Theory behind machines
- Basic Electricity (for mechanics)
- Mechanics and lubrication of bearings
- Repair of construction equipment
- Energy saving techniques
- Refrigeration
- Maintenance inventory management, record keeping
- Work practices and behavior

All sites indicated that employees would be allowed to attend training courses during working hours if the course contents were important to the company. Training could otherwise be received after work (after 18:00 hrs.) or during the weekend. All sites would be willing to pay 100% of the training cost if course contents are job related. Since the sample for this survey consisted of medium to large size companies, it is likely that smaller

companies would be less flexible sponsoring employee training due to costs.

3. Major Maintenance Problems

Major maintenance (preventive and corrective) problems reported include:

- Lack of knowledge about maintenance and repair
- Workers negative attitude towards their job
- Excessive time required to order and receive spare parts
- Lack of parts machining equipment (for in-house production)
- Difficulties obtaining unique parts and materials
- Lack of knowledge about hydraulic and pneumatic systems
- Lack of problem understanding (trouble shooting techniques)
- Engineers from UNAH are not ready to work in industry
- Lack of coordination with plant production and operations departments
- Turnover (trained workers move to other companies)
- No libraries or reading habits
- Machines available and in use were not designed for Honduran industrial environment (low technology, small lot sizes, small investment capital)

All sites indicated that new maintenance employees were usually assigned to an experienced maintenance person for further on-the-job training for up to 3 years.

4. Reasons for not doing preventive maintenance

The main reasons reported for not implementing preventive maintenance programs include:

- Lack of implementation knowledge
- Workers and management attitudes oppose preventive maintenance (e.g., they consider that they should be idle until the machines break - don't fix it if not broken)
- Equipment maintenance specifications and manuals lost or never received (i.e., if equipment was purchased second hand)
- Plant production can not be stopped (one notable exception is Ray-O-Vac which stops production completely for 3.5 weeks per year for complete preventive maintenance of all equipment - this company has maintained production levels throughout the current recession)
- Lack of time (not enough personnel) due to rapid growth (in market demand). This was only reported by wooden furniture manufacturers.
- Workers resistance to work weekend shifts (when maintenance activities are usually scheduled)
- Workers are afraid of industrial environment (due to lack of hands-on training).

5. Other Information Collected

Some sites reported that they will implement computerized maintenance planning and control systems in the near future (1 to 2 years). All companies agree that additional training will improve current working conditions. Most companies tend to acquire several small machines vs. large ones, thus requiring more maintenance.

Most sites reported that new employees are located using word-of-mouth and personal recommendations because newspaper ads usually yield a flood of unqualified applicants.

H. Assessment of the supply side

Several major deficiencies were detected in currently available industrial maintenance and related training programs.

- (1) The training level touches only on basic principles and not on needed theoretical principles due to the absence of a higher level technical training program.
- (2) The training does not include or barely touches on pneumatics and hydraulics principles, equipment and systems.
- (3) Electronics maintenance and repair training is focused mainly for home appliances and not industrial applications.
- (4) Electrical maintenance and repair training is not focused for the industrial setting.
- (5) Most of the material covered is applicable only to older technology used in the country, but does not cover newer systems.

The reasons for these deficiencies are simple. The most important one is that training programs are created and implemented in Honduras at a much slower pace than industrial advances. Another reason is the absence of formal meeting forums where industry and training institutions can discuss priority training needs. Another reason is that formal education technical programs sponsored by the Ministry of Education have been focused towards preparing graduates for university degrees, at the expense of de-emphasizing practical technical experience.

Industrial maintenance training programs that try to resolve deficiencies (2) to (5) noted above have been established within the last 12 months by INFOP and CADERH. The INFOP program is mainly an expanded Metal Mechanics training program that includes welding and some electrical repair skills. INFOP has upgraded their training equipment for apparel maintenance mechanics in San Pedro Sula, and has sent out for bids for new industrial apparel equipment for the INFOP San Felipe site.

The CADERH program is a videotape program designed for in-plant training. UNIDO reports that CADERH training costs are too expensive for small companies which seem to represent the largest employer in this area.

INICE in Tegucigalpa currently trains teachers in metal mechanics, electrical and electronics repair, among other occupations. These facilities are under utilized and consequently the INICE director is actively seeking partnerships with other institutions to implement programs that could include industrial maintenance training.

Both INFOP and CADERH have performed or are performing assessment of training requirements for specific industrial maintenance needs. INFOP recently proposed a dedicated center for maintenance and repair of heavy construction and agricultural equipment, CCEIN [INFOP 1994]. CADERH is planning to expand its industrial maintenance programs into industrial electronic maintenance, industrial welding and metal mechanics at its new center in San Pedro Sula. The number of graduates from the INFOP program still have at least one year to complete their program and the CADERH program will only begin in 1995.

INFOP had initiated under the previous government a proposal [INFOP 1993b] to address the deficiency note in (1) above, but has had to postpone negotiations with the UNAH pending government appointments of new management at INFOP.

The bulk of the labor force currently working in industrial maintenance occupations seems to come from INFOP vocational programs in metal mechanics, welding, electrical and electronics repair, and the Ministry of Education's Technical Basic Cycle (3 years after elementary school) and technical high school (3 years beyond the basic cycle).

Typically, basic cycle graduates or technical high school graduates enter the job market and are trained on the job, or enter INFOP after their high school education and then enter the job market.

Two main technical High Schools are recognized in industry, Instituto Luis Bográn and Instituto Técnico Honduras-Alemán. Several sites visited indicated that Honduras-Alemán used to be excellent until its operations were completely transferred to the Ministry of Education. The number of graduates per year in industrial maintenance related programs from these and other technical institutes was not available at the time of the interviews or from available documents. INFOP officials estimate a yearly output of 200 graduates in industrial maintenance related INFOP programs in 1994, compared to 155 in 1984 [USAID/CADERH 1984]. INFOP has abandoned training programs in refrigeration, heating, pneumatics and hydraulics due to lack of trained instructors and equipment.

The Ministry of Education showed new industrial training curriculums ready for implementation in early 1995 with restored emphasis on practical experience (12 hrs. per week versus 2 to 3 currently). The emphasis for the past few years in these institutes has

been to form candidates for a university degree and consequently received very little hands-on training in industrial occupations and almost no training in industrial maintenance.

Table 3 contains the skills identified as most needed for the industrial maintenance trade. Most of these skills are already being imparted by different institutions but at a lower technical level than required by industry.

I. Supply constraints

Formal education training programs are constrained for a variety of reasons:

- Curriculum mandated to focused on preparation for a university degree.
- Little or no training equipment available and in disrepair.
- Instructors are not actively employed in industry.
- Existing curriculum is too general due to its purpose as a preparation for a college degree.
- No entrance exams and consequently the need for remedial teaching and occurrence of high dropout rates.
- Development of new programs require a long time and may be completely stopped by new governments.
- Equipment suppliers are inconsistent about maintenance specifications and training materials are not available publicly.
- No formal consultation forum between industry and education institutions to determine real needs.

Non-formal training institutions are faced with similar constraints including:

- Level of education (elementary school or less) of incoming trainees is very low, hence the need for remedial teaching and the occurrence of high dropout rates.
- Quantity of graduates seems too little due to limited facilities and financial resources.
- Can not offer training on several common systems (e.g. pneumatic and hydraulic systems) due to lack of qualified instructors, facilities and financial resources.
- Instructors are paid wages below industry wages.
- Comprehensive curriculums are perceived as too long according to industry (800 hrs. by CADERH) as compared to short ones (24-48 hrs. CADERH courses and 4 month programs at INFOP)

J. Potential solutions

Several potential solutions were discussed during the interviews with trainers and employers.

- Support new programs like the INFOP-UNAH "Master of Shop" proposal and other higher industrial maintenance programs. Examples of such programs exist in Costa Rica, used as model for the INFOP-UNAH proposal, and the programs offered by USAID/FEPADE (Fundación Empresarial para el Desarrollo Educativo) in El Salvador.
- Establish cooperative training programs among existing institutions, e.g., INFOP, INICE, UNAH, and CADERH.
- Promote specialized short training courses on a particular manufacturer's equipment. CADERH, INICE, UNAH and similar institutions would probably be the most adequate institutions to provide this type of training.
- Concentrate resources to establish strong comprehensive programs. The example found was with INFOP locating some new equipment for apparel mechanics in San Pedro Sula in 1994 and some other in Tegucigalpa in 1995, with neither site having the full range of equipment required for comprehensive training.
- Increase the number of training equipment at existing facilities and the number of practical training hours.
- Modify the curriculum of technical high schools to have major emphasis on practical knowledge. (As the most successful students in these schools could continue their technical education under a master technician program - see recommendations - it is not expected that technical high school students would choose to attend a non-technical university. If "losing" technical students to UNAH or other institutions becomes a problem, certain penalties could perhaps be imposed.)
- Create programs to train a higher level technician, after high school, with strong emphasis on hands-on training as well as a deeper theoretical knowledge to cut the on-the-job training time to one year or less.
- Establish stronger formal links between training institutions and industry associations to reflect industry needs on training curriculums and instructors qualifications, the so called "Dependencias de Enlace con la Industria" or DEI's.

- Accelerate new curriculum development and implementation. Existing training institutions will need assistance with curriculum development for high-tech priority areas.

K. Job Mobility

It seems there is no intermediate job level for maintenance employees. That is, once employed as a technician, it is unlikely to be promoted to supervisor or management level positions. On the job experience does provide much higher job security and better wages since several companies reported that they heavily depend on their maintenance and repair "gurus".

Sub-qualified workers, those with only basic cycle education, or elementary school plus INFOP training, start as helpers to mechanics or electricians, and may raise to technician positions because of on-the-job experience or further vocational training.

High school and INFOP graduates become maintenance technicians (initially assigned to a senior technician) and can eventually become the company "gurus". These employees can raise in the ranks if they pursue university or managerial training, but the impression formed during interviews is that this rarely happens. These technicians lack the depth of technical knowledge and basic managerial training required to become management-supervisors.

L. Impact of skill deficiencies and workplace practices in productivity

Several potentially severe problems arise because of the skill deficiencies identified in this training area. The most important one is a potentially large reduction in productivity due to lack of implementation of preventive maintenance and lack of knowledge of trouble shooting techniques (based on solid theoretical knowledge). The positive and large impact on productivity of well implemented preventive maintenance programs is well known in industrialized countries.

Potentially dangerous accidents may occur because some (if not most) machine operators must also do routine maintenance.

Job dissatisfaction of high school graduates, with 6 years of schooling after elementary school, was reported during the interviews because they must compete with INFOP graduates with only 2.5 years of schooling.

Costly on-the-job training, as long as three years after hiring.

M. Recommended Actions

1. Immediate

The UNIDO project to start "industrial maintenance enterprises" [ONUUDI, 1994b] should be pursued by CADERH, INFOP, INICE, and others because the establishment of this type of solution would,

- Address what seems to be the largest employer of industrial maintenance personnel;
- Succeed in a short time, since it has proven very successful so far in Honduras; and,
- Be very cost effective because it results in self-sufficient entities right from the start.

Support the creation of a higher level maintenance technician training program (master technician), with one or two years post-technical high school training, to provide a much needed ready-to-work industrial maintenance employee and fill the absent training step required for job mobility.

This program could be implemented as a formal education program (i.e., a university extension school) with sufficient hands-on training or as a non-formal or vocational (INFOP, CADERH, INICE and others) program with deeper treatment of theory.

Support CADERH and trade associations' training programs (e.g., wood, packaging, etc.) to create and provide short term, focus technology courses, e.g. for a particular brand name class of machines used by many similar factories, or in the case of electronic control systems (low equipment cost) provide longer term courses requiring as an entrance requirement the master technician education or comparable experience.

Provide technical and financial assistance to existing training institutions for the development of curriculum contents, materials, and instructor training in the areas for which core competency deficiencies were identified.

2. Medium-Long Term

Perform an assessment of a statistically significant sample of industries to develop clear quantitative training goals.

Develop an analytical or empirical model to more precisely estimate the size of the labor force required. For example a computer simulation model using manufacturers' Mean-Time-Between-Failure data, equipment ages, local maintenance factors, etc., to establish an envelop of labor size requirements, replacement parts requirements, etc.

Table 3 - Suggested Training Core Competencies

Electronics Repair and Maintenance

- terminology, diagrams and symbols
- digital circuits, DC electronics, AC electronics
- active circuits, printed circuits
- test techniques, alignment and calibration
- semiconductor devices and circuits
- operational amplifiers/OP , diodes, rectifier circuits, bridge/split supply circuits, oscillators, triac/diac circuits
- IC timers, junction and field effect transistors, counters
- analog-digital and digital-analog converters
- process controllers, timing, latching, shift registers, memory devices, inter-system communications
- sensors (proximity, positioning, density, weight, level), transducers/transmitters
- readout devices/display devices
- instrument and loop troubleshooting procedures
- pneumatic control valves, relays, controllers, loops
- programmable machines, control modes (PID)
- control strategies (ratio, cascade, feedforward)
- electro-pneumatics
- DC servo motors
- robotics maintenance and repair
- circuit design
- wire wrapping
- reading schematic diagrams
- soldering
- inspection
- record keeping and inventory
- industrial safety & hygiene

Electrical Repair and Maintenance

- record keeping and inventory
- testing techniques
- troubleshooting procedures
- pneumatics
- transformers and voltage regulators
- electro-pneumatics
- DC servo motors
- relays
- circuit design
- wire wrapping
- reading schematic diagrams
- soldering

- inspection techniques
- industrial safety & hygiene
- motors (washdown, clutch/brake, rotary-gear, centrifugal, vane, magnetic drive
- cable specifications
- record keeping and inventory practices
- codes and standards
- power system harmonics

Metal-Mechanic Repair/Maintenance

- measurement techniques, SI and English systems
- record keeping and inventory
- preventive/Predictive maintenance techniques
- welding techniques: Oxyacetylene welding, stick welding, MIG, TIG, applied to steel, stainless steel, aluminum and cast iron
- industrial Safety & Hygiene
- motors (washdown, clutch/brake, rotary-gear, centrifugal, vane, magnetic drive
- pumps
- compressors
- gears, bearings and reducers, velocity joints, power transmission systems
- inspection techniques
- codes and standards
- boilers and pressure vessels, steam/water systems
- pneumatics and hydraulics
- machining processes: measurement, gauging, quality control, lathes, milling machines, drills, presses, saws (contour, cutoff), shapers (horizontal/vertical), planers, broaching machines, surface grinder machines
- bench power tools
- work Tools (wrenches, impact and power sockets, torque/tensioning tools, workholding tools)
- surface grinding, precision
- blueprint reading and layout procedures
- EDM (electrical discharge machines)
- Work hardening and thermal treatment, casting, cold/hot metal working, powder metallurgy
- Computer Aided Design/Manufacture (CAD/CAM)

Electrical wiring

- planning
- layout
- installation
- low voltage wiring applications
- planning, connection and layout of panel boards
- underground service equip.
- codes and standards

- motors and controls
- wiring for generators and transformers
- conduit bending
- large cable installation

Heating/Ventilation and Air Conditioning (HVAC)

- Fundamentals of refrigeration
- installation, assembly and service practices
- basic electricity
- control wiring
- electrical troubleshooting
- Heating systems (gas, oil, electric)
- brazing, silver brazing
- gas welding
- industrial safety and hygiene
- Gas, oil, and electric heating and fuel filtering system
- maintenance schedules
- boiler and burner standard codes
- compressor repair
- trouble shooting
- preventative maintenance
- maintenance of chilled water systems

Industrial Maintenance Management

- Maintenance Plan & schedules
- Maintenance budgeting and cost control
- Maintenance Performance and service measurement
- Maintenance leadership
- Maintenance teams
- Implementation of "Effective Preventive/Predictive Maintenance"
- Adaptive proactive management with vision
- Maintenance and plant operations interfaces
- Maintenance storeroom management
- Reliability and Maintainability concepts
- Industrial safety & hygiene, codes and standards
- Maintenance Training programs
- Computerized Maintenance Management and Information Systems

NOTE: The following competencies are not required for industrial maintenance occupations and are just provided as a reference.

Collision repair

- Automobile construction
- analysis and repair of bid damage

- welding
- brazing
- heat shrinking
- priming and painting techniques
- panel and body parts replacement
- use of frame and measurement equipment
- radiator and air conditioning repair
- repair of fiberglass, rubber, plastic, synthetics
- windshield replacement

Automotive Maintenance and repair

- Preventive maintenance
- use of shop repair manuals
- brake, steering and suspension systems
- engine and transmission service (including transaxle)
- Electrical and electronic systems and controls
- automotive computer systems
- safety practices

Carpentry/Remodeling/Maintenance

- Measuring
- layout
- cutting
- edge cutting
- boring holes
- sill and girder layout
- installation of cornices, gutters, roofing,
- safety practices
- codes and standards

Plumbing

- Identification and use of plumbing power and hand tools
- components and installation of plumbing systems
- set and finish of fixtures
- piping applications
- codes and standards
- installation of boilers/heaters
- heating equipment and controls
- safety practices

Table 4 - Summary of the Data Collected for the Demand Side

Site	Trade	Location	Employees	Preventive Maintenance	Maintenance Employees (percent of head count)	Workers ages and education	Monthly Income (Lps)	Years of service	New permanent positions (2-3 years)	Parts Warehouse	Maintenance Costs (Lps) per year
1) Fabrica Presidente Medina	Apparel	San Pedro Sula	373	Yes	10 (mechanics, helpers & supervisor) (2.7%)	Techs - 21 to 32, High School. Supv. 47 - Incomplete Eng. college	Techs. - 1,500 to 1,800	3 to 9 yrs.	0	Yes	1,000,000
2) Tapes Centro America	Metal containers and furniture	San Pedro Sula	110	No	7 (mechanics, helpers & supervisor) (6.4%)	Techs - 20 to 22, High School and INFOP	Techs. - 800 to 3,000	Techs. - 15 to 24 Superv. 40 yrs	10	No	1,000,000
3) Orion Industrial	Packaging Containers	San Pedro Sula	170	No	16 (12 mechanics, 4 electricians, helpers and supervisor) (9.4%)	Technical High School	1,200 to 1,300	1 to 8 yrs.	6	Yes	200,000
4) CONDELTA	Building, Residential and Road construction	San Pedro Sula	about 100	Partially	12 (12%)	Average 40 yrs. with elementary schooling plus INFOP courses	Average 4,000	average 5 yrs.	0	No	5,000,000

Site	Trade	Location	Employees	Preventive Maintenance	Maintenance Employees (percent of head count)	Workers ages and education	Monthly Income (Lps)	Years of service	New permanent positions (2-3 years)	Parts Warehouse	Maintenance Costs (Lps) per year
5) Cervezeria Honduras	Soft drink bottling and beer brewing/bottling	Tegucigalpa	more than 100	Yes	more than 69	average 28 yrs. with technical high school and supervisor with College Eng.	Not provided	Techs. - 4 yrs Supervisor 7 yrs.	0	Yes	8,000,000
6) Químicas Magma	Chemical products	Tegucigalpa	more than 100	No	3	supervisor - 35, Mechanical/Industrial Eng.	supervisor or more than 2,000	Supervisor 10 yrs.	1	Yes	Not provided
7) Ray-O-Vac	Batteries	Tegucigalpa	50 to 69	Yes	13 (3 electricians, others are mechanics)	supervisor - 35, Chemical Eng. Techs. - 25 to 30, technical high school	techs. - 1,000 to 2,000	Techs. - 8 yrs. average	2 to 5	Yes	2,000,000 about 10% of revenues)
8) DERIMASA	Largest wooden furniture manufacturer in Central America	Tegucigalpa	500	No	10 (2%)	supervisor - 35, Mechanical Eng. Techs. 22 to 25, incomplete and complete high school	techs. 900 to 1,500 supervisor or 3,500	techs. 3 yrs. supervisor or 8 yrs.	2 to 5	Yes (informal)	at least 250,000

Site	Trade	Location	Employees	Preventive Maintenance	Maintenance Employees (percent of head count)	Workers ages and education	Monthly Income (Lps)	Years of service	New permanent positions (2-3 years)	Parts Warehouse	Maintenance Costs (Lps) per year
9) Textiles R to Lindo	Textile	Tegucigalpa	more than 1,000	Yes (also predictive)	100	average 20 to 60 yrs., incomplete technical high school	1,000 to 2,000	1 to 7 yrs.	No	Yes	not provided
10) Del Bosque Productos	Wooden Furniture	Tegucigalpa	20 to 50	No	4 (1 electrician, 2 mechanics, 1 engineer)	25 to 35 yrs., techs. - incomplete technical high school supervisor - college B.S. in forestry	1,000 to 2,500	techs. - 3yrs. average supervisor or - 11 yrs.	No (unresolved national forestry policies)	Yes	320,000
11) Honduras Fostoreras	Matches	Tegucigalpa	more than 100	Yes, but little	12	techs. - 28 to 30 yrs., incomplete technical high school supervisor - 40 to 50 yrs., Mechanical Eng.	techs. 4,000 to 5,000	Supervisor - 20 yrs. techs. 10 yrs.	6 or more	Yes	500,000 to 1,000,000

Industrial Maintenance References

- Farrant, R., 1992. "Informe Sobre la Industria Metal Metálica en Honduras," [1992].
- INFOP, 1993a. "Area Industrial: Programa Maestro de Taller," Tegucigalpa.
- INFOP, 1993b. "Rama Metal-Mecánica," Tegucigalpa.
- INFOP, 1993c. "Informe Estadístico 1993 - Instituto Nacional de Formación Profesional," Tegucigalpa.
- INFOP, 1994. "Propuesta del Proyecto del Centro de Capacitación de Equipo Pesado y de la Construcción (CCEIN)," Tegucigalpa.
- Kelly, T. et al, 1985. "Addressing Employment Needs: A Study of the Training System in Honduras," Tegucigalpa.
- Muñoz, A.H. et al., 1988. "Identification of Honduras' Training Needs for the Period 1990-1999 and the Development of a Training Strategy and Model Development Training Project." Arlington, Virginia, 1988.
- ONUDI, 1994. "Programa de Capacitación," Tegucigalpa.
- ONUDI, 1994. "Programa de Auto-Evaluación para Facilitar Un Proceso de Reestructuración del Proceso Productivo," Tegucigalpa.
- Salmon, Kurt Asso. "Human Resource Development Program," Tegucigalpa 1990.
- USAID/CADERH, 1984. "Instrucción Vocacional en Honduras: Programas de Capacitación Industrial, Artesanal y de Computación," Tegucigalpa.
- Zelaya, J. et al, 1994a. "Investigación en el Area de Mantenimiento Industrial," Tegucigalpa.
- Zelaya, J. et al, 1994b. "Proyecto de Investigación de Necesidades de Capacitación de la Fuerza Laboral en: Mantenimiento Industrial," Tegucigalpa.

CHAPTER VI. RESIDENTIAL CONSTRUCTION

A. Purpose of the study

The purpose of this study is to assess the capacity of Honduras to meet the labor force requirement in today's highly competitive and integrated economy in the construction sector, which is one of the key economic sectors of the country, both in its percentage of the GNP and as a source of employment.

The specific objectives of the study are: (i) to identify and explain anticipated current and projected (3 - 5 years) imbalances in technical and managerial skill demand and supply. (ii) to determine the effect of national labor, tax and employment laws on the development of human resources for productive employment, job mobility and wage flexibility. (iii) to determine the relevance, responsiveness and internal and external efficiencies of non-formal training institutions. (iv) determine the extent to which reliable current market labor data exists and is utilized by policy analysts, individuals and employers to allocate training resources. (v) to initiate a national dialogue on the importance of having in place the proper legal, regulatory and institutional framework to facilitate the development and the placement of labor into the construction sector; and (vi) to support effort of the USAID/Honduras to institutionalize the capacity of the Honduran Government and appropriate private organizations to routinely assess the labor market.

B. Methodology

Since INFOP is the key government institution dedicated to the function of training, many interviews were conducted at different levels in order to understand well that training institution.

The Honduran Chamber of Construction, CHICO, gave their full cooperation, which included the arranging of meetings with some of their member companies. A total of 12 or about 6% of the 219 construction companies were interviewed. In most cases, the person interviewed was either the president, the general manager or the vice-general manager of the company.

For the purpose of the interviews, a list of 30 questions dealing with labor, training, administration, management, materials, suppliers, equipment, construction methods and other issues was prepared. However, this questionnaire was used as a base to initiate a dialogue with the person being interviewed.

In order to have a representative sample of the construction companies, about 25%

of the companies interviewed were large, over US\$6 million dollar equivalent of work per year, 50% were medium size or about US\$2 to US\$6 million per year and the other 25% were small with work less than US\$2 million per year. Also, a couple of them were located in San Pedro de Sula.

C. Description of Industry (trends 3-5 years)

Product line, Downstream-Upstream linkages, Sales, Employment levels, Exports, Foreign Earnings.

The construction industry represents about 7% of Honduras' GNP, which as of 1993 was 18554 millions Lempira or about 2 billion US dollars, (See Table 1). This sector employs about 5% or about 70,000 persons of the active labor force, which as of 1992 was about 1.5 million persons. (See Table 2).

Table 1.
DISTRIBUTION OF GNP BY SECTOR 1989-93
(at current prices)

	1989	1990	1991	1992	1993*
Agriculture, Forestry and Fisheries	21%	22%	23%	20%	20%
Mining	2%	2%	1%	2%	2%
Manufacturing	15%	16%	17%	18%	18%
Construction	5%	5%	5%	7%	7%
Electricity, Gas, and Water	3%	3%	4%	3%	4%
Transportation, Storage and Communication	7%	6%	7%	7%	6%
Traffic, Hotels, and Restaurants	12%	12%	11%	11%	11%
Finance, Insurance, and Real Estate	8%	7%	8%	8%	8%
Dwellings	8%	7%	6%	6%	6%
Public Administration and Defense	8%	7%	8%	7%	7%
Services	12%	12%	10%	11%	11%
Total** (Millions of Lempiras)	9,256	11,156	13,975	16,103	,18554

*1993 figures are preliminary.

**Total is GNP at factor prices (not including indirect taxes)

Source: Calculations made from material published by the Banco Central de Honduras.

Table 2.
TOTAL EMPLOYMENT IN TARGET SECTORS
(employed persons)

Sector	1989	1992	Change 89-92
Construction*	67,243	69,939	4%
Wood Product Manufacturing**	1,577	2,289	45%
Tourism 1***	26,781	30,277	13%
Tourism 2***	4,639	4,823	4%
Industrial Maint****.	38,621	58,873	52%
Total	1,221,728	1,490,288	22%

*All employed persons in construction sector.

** All employed persons in manufacturing wood products.

1*** All employed persons in restaurants and hotels.

2*** All employed persons in hotels and restaurants in hotels.

****346 different occupations associated with industrial maintenance.

Source: Encuesta Permanente de Hogares de Propósitos Múltiples.

The construction industry, just as the other sectors of the Honduran economy, is currently suffering a recession. The current unemployment level is at about 35%. There are no precise data for the construction sector, however, the unemployment there is usually about 25% less than the national average, which would still be a high 27%. This situation is due in part to the change in Government of Honduras administrations in January '94, which suspended or deferred some construction projects as well as to the Banking regulation "encaje" imposed, reducing the available funds and raising costs. The current high cost for commercial loans which is about 36% and for housing which is about 14%, however, is expected to be raised to about 19%. In the interviews most of the companies said that their volume of work and number of employees were at about one half to one third of their peak year numbers.

The Lempira continues to devaluate against the dollar to a current 9 to the dollar. Inflation also continues to be high, at an annual rate of about 28% for the first six months of the year. It should be pointed out that the two conditions mentioned above were, in part, responsible for the boom in construction of the two previous years, since people invested in real estate to protect their holding. However, the available money has dried out which is another important reason for the current recession.

It was not possible to obtain projection data. However, due to the present economic situation and the hard times expected due to the new economic actions "paquetazo" imposed by the international financial institutions. These economic measures which are expected to be implemented in the near future will most likely in the short term extend the present recession. Therefore, it is safe to assume that the construction sector in the next couple of years will, at best, stay at the 1994 levels.

The construction industry is concentrated mainly in the Tegucigalpa and San Pedro Sula areas. The main products are:

- low to high income housing
- commercial and industrial buildings
- roads and major infrastructure civil works

The latter two are usually government funded and the rest are usually privately funded. At the present time there are no new major civil works under the bidding process and about 70% of the private permits obtained in the first 6 months are in the San Pedro Sula area. (See Table 3)

The present technology used in the sector especially in residential construction is not advanced. It is labor intensive, since labor is relatively inexpensive. A laborer makes the equivalent of about US \$1.5 dollars per day and a bricklayer, carpenter or steel workers about US \$3 dollars per day.

The industry uses reinforced concrete structure with walls made of concrete block and/or clay brick, wood ceiling and trusses and asbestos, zinc or tile roof. The use of prefabrication methods, concrete pumps and metallic forms for the concrete is very infrequent. The reason for this in addition to the cheap labor is that in most cases the market could not very well assimilate the number of houses that could be built using more modern construction methods. Also, the use of wood over metal for the forms is somewhat justified, since the initial cost of the metal form is high and it should be used repeatedly in order for the investment to pay off.

The construction industry is a highly volatile business, very difficult to forecast and manage. It is usually characterized by permanent cash flow problems and most of the managers operate in a reactive fashion, since they act more as fire fighters going from site to site. Strategic planning is not commonly used in the industry and a common practice is that whenever there is an excess of cash, it is invested outside the company, leaving the construction company with a shortage of working capital.

Table 3.
CAMARA HONDURENA DE LA INDUSTRIA DE LA CONSTRUCCION
REPORTE DE PERMISOS DE CONSTRUCCION 1994

TIPO DE OBRA	TEGUCIGALPA			SAN PEDRO SULA			TOTALES		
	Numero de Permisos	Area (M2)	Inversida (000 Lps.)	Numero de Permisos	Area (M2)	Inversida (000 Lps.)	Numero de Permisos	Area (M2)	Inversida (000 Lps.)
Vivienda	500	56,738.35	45,994.19	681	161,719.1	305,769.9	1181	218,457.5	351,764.17
Edificio	46	36,434.72	19,314.12	62	37,189.21	36,954.08	108	73,623.93	26,268.20
Otros	34	23,353.21	13,735.62	67	23,197.15	5,330.57	108	46,550.36	19,066.19
Bodega	4	668.97	542.50	27	117,525.8	10,607.80	31	18,194.83	11,150.29
					6	7		1	

The construction industry involves many companies in the up-stream and a few in the down-stream; Some of the up-stream are; cement plants, concrete, block, paint, transport, electric and plumbing materials, aluminum and wood products and steel. In the down-stream it involves fewer companies, such as landscaping, companies dedicated to the installation of iron bars for windows, electrodomestic appliances, furniture and domestic services.

The construction industry does produce some imports in the up-stream. However, this happens only in the high priced/quality construction, both residential and commercial, where technical specifications will usually call for many of the materials to be imported, such as; electrical and plumbing features, AC, elevators, etc. This is not the case for low income housing, where most of the materials are made locally.

For the construction of the infrastructure in general it produces imports, since all the equipment, heavy and small is imported, as well as fuel and spare parts. At the present, the construction industry in Honduras does not produce any exports and there are not any Honduran companies working outside the country. On the contrary, there are some foreign companies working in Honduras, usually in joint venture with locals.

D. Description of Labor Force (trends)

Occupational mix, educational/skill labor, age, experience, gender, turnover, income levels,

The construction labor force is made up by mostly males generally those with a low level of education. As can be appreciated in the Table 4, 16% of the labor force does not have any education, 37% have incomplete primary education, (2nd to 4th grade on the average) and 33% have completed the primary. Regarding secondary education, 7.5% have incomplete education and only 2.6% have completed it.

As far as the construction companies are concerned, the level of education of any prospective employee is, in most cases, irrelevant since what is important is that the employee has experience and is not a trouble maker.

The way the workers obtain their skills is in most cases by apprenticeship. In the case of the bricklayers ("Albañiles") it is usually the helper "Ayudante" who eventually becomes a bricklayer. The training institutions such as INFOP have produced very few trained specialized labor for the construction industry.

Table 4.
EDUCATIONAL PROFILE OF EMPLOYED WORKFORCE
IN TARGETED SECTORS
(1992)

Education	Construction*	Wood Products **	Tourism***	Industrial Maint. ****
None	15.6%	3.0%	12.0%	3.1%
Primary Incomplete	36.9%	13.3%	36.8%	20.9%
Primary Complete	32.8%	27.5%	26.3%	36.8%
Secondary Incomplete	7.5%	12.0%	13.2%	23.2%
Secondary Complete	2.6%	18.8%	9.4%	10.7%
University Incomplete	2.5%	7.5%	.6%	1.9%
Complete University	2.0%	18.2%	1.7%	3.5%
Total	69,939	2,289	30,277	58,873

*All employed persons in construction sector.

** All employed persons in manufacturing wood products.

*** All employed persons in restaurants and hotels.

****346 different occupations associated with industrial maintenance.

Source: Encuesta Permanente de Hogares de Propósitos Múltiples.

The same principle is applied to the equipment operators and mechanics; However, in the case of the latter, there is some training by INFOP and CADERH, as well as by some vocational schools. Also, in some cases, the equipment dealers offer some training courses by video to the operators of the equipment purchased from them. The good quality of the courses available from Caterpillar is well known in the industry.

Some of the consequences of this low level of education and lack of training programs among the construction workers are the bad quality of work, absenteeism and inefficiency which produces a high turnover of employees. Also, the lack of training and education, can be very costly and dangerous, as is the case with the mechanics and equipment operators. Often, the equipment is severely damaged by a bad operator, inappropriate maintenance or a faulty repair.

E. Skills/Core Competency Requirements and Identified Areas of Deficiency.

The construction industry requires different kinds of skills. In the residential area; bricklayers, carpenters and steel workers are the main core of the work force. At the moment with the present recession and an unemployment around 30%, the construction companies are not having problem finding the required labor force. However, when asked if they thought that in the case of a recuperation in the industry, whether getting a good specialized worker would be a problem, they all answered in the affirmative.

Even in the present economic situation, often the companies find themselves wishing they had more of the better qualified and trained employees. This is also true in the case of equipment operators and mechanics.

The main problem has to do with the low level of education and the lack of training, since, on the average these workers have a 2nd to 4th grade level of education and they have achieved their skills by apprenticeships. Therefore, whatever inefficiency is in the field, this is carried on to the next generation, unless this trend is changed by a training program.

Also, there is very little new construction technology being used at the present time in Honduras. Therefore, the introduction of new technology into the industry, such as prefabrication methods for housing, steel forms instead of wood, the use of pumps for the pour of the concrete and the use of new materials for the electrical and plumbing installations, just to mention a few, which would eventually happen, will require a more skilled labor force which will only be achieved by an aggressive and sensible training program.

It is important to mention that during the interviews, the managers overwhelmingly answered in a very positive and enthusiastic fashion to the question of wishing to improve their present construction technology.

F. Workplace Practice of Employers

Recruitment, Training, Promotion, Job Security, Wage Policy, Employee Participation in "Management Decisions", Organizational Structure, Ensuring Product/Service Quality, Integration of human resources practices and long-term company strategy, and promoting opportunities for women.

The recruitment in the industry is usually done by advertisement by word-of-mouth of the new project and by putting up recruitment signs on the project site. On some occasions announcement are made on the radio. The newspaper and other written means of publication are not commonly used. The reason being

that most of the workers listen to the radio. However, not many buy a newspaper, since not all know how to read and/or can afford to buy the paper every day.

None of the interviewed executives said that their companies had a training program for their workers. However, most of them said that they would be willing to have their workers participate in some kind of training program and, even more, they would be willing to pay the employee during training, if they could be assured that the workers would go back to work for them for a certain period of time once their training had concluded.

In the construction industry, the issue of job security is quite different from that in most of the other industries, since most of the jobs are for a specific projects and once a project is finished so is the work for most of the workers.

Good bricklayers, carpenters, steel workers and foreman are often the most sought of workers besides good and hard working common laborers. It is a common practice in Honduras to subcontract the labor. The company will negotiate a price for a specific segment work, such as the walls, floors, the trusses or roof with a bricklayer/foreman or carpenter/foreman and he in turn will hire his own workers to do the job. This method which is widely used, transfers the responsibility of finding workers from the company to the subcontractors. Also, this method seems to give an advantage to the construction companies since, in most cases, the companies avoid having to pay the fringe benefits required by law.

Many companies, whenever possible, carry their main core of specialized laborers from one project to the next. In the case of foremen, occasionally they are kept on the payroll, even when they are not actually working and are waiting for the next project to start in order not to loose them to the competition. This is also true, in the case of companies with heavy equipment for the operators and mechanics.

Promotion among the workers of the construction industry for all practical purposes, does not exist. A common laborer working as a helper to two or more bricklayers may, in time himself become a bricklayer. However, this will take time, initiative and some training. Also, a bricklayer will, very likely, always be a bricklayer, unless he becomes a foreman which, again, can happen only over time and with training. However, this only happens to a very small percentage of the labor force. For all practical purposes the promotion comes more in the area of management with the engineers supervising the projects. The same can be said about the practice of sharing profits.

In the construction industry, participation of the foreman in certain management decisions is a common practice, especially regarding specific ways of doing the work. There is usually a good degree of communication between the

project engineer and the foreman and, in most cases, between the foreman and the specialized workers, as well as the engineers and management. However, this is not so in the case of the communication between the engineer/management and the workers.

Most of the labor force in the construction industry is male. One must understand that at the level of the labor force in the field there is little education and a macho mentality is very common. The introduction of women into that field is going to take time and education. However, in the management and production areas, women are beginning to make strides. Of the 13 executives interviewed, two were women. As usual, in the administrative personnel there are large numbers of women, especially as secretaries and administrative assistants.

G. Impact of Skill deficiencies and Workplace Practices on Productivity.

The most significant impacts of the skill deficiency in the Honduran construction labor force are the following:

- A higher rotation of employees. It was learned from over 50% of the persons interviewed that deficiency is the most common cause of employees' dismissals in addition to termination of the work for which they were hired.
- Bad quality work causing in some cases extra expense for the contractor whenever the work has to be redone.
- Negative effects of poor labor - managements relations.
- Greatly reduced the efficiency and productivity of the industry, making the product more expensive and making it more difficult to compete in the construction market outside Honduras.

The lack of modern construction technologies in the Honduran construction sector such as prefab housing, especially in the lower income housing, metal concrete forms instead of wood, concrete pumps, more power and electric tools such as power nailers and others and more use of equipment for certain operations instead of labor reduces significantly, the efficiency of the sector. The reasons for this are both the high investment cost of the equipment and, at last sometimes, the lack of skill of the available workers.

H. Major Human Resources Constraints in the Sector

1. Education and Training System
2. Labor Laws and Regulations
3. Employer Practices
4. Employee Practices
5. Labor Market Information System

1. As was confirmed by the interviews, the level of education of the employee is not usually an issue that is considered by the employer when hiring a worker, however, it is definitely a major constraint in the quality of the labor force. As was explained before, the limitations of a worker with a 2nd to 4th grade education are many. Inefficiency, absenteeism, alcoholism, lack of training and promotion become more difficult and low productivity usually sets in.

There are training centers in Honduras, such as INFOP, CADERH and many vocational schools. However, these are not very involved with the construction sector. INFOP, however, has not let the sector state their requirements.

2. The present labor laws in Honduras do not seem to affect the development of the construction sector. They do not in any way prevent or even hamper the employer in hiring, transferring, promoting, training and/or dismissing an employee. They do not allow the employer to lower the set wages. However, in time of recession of the industry and high unemployment, is not unusual that the worker is willing to work for less. Also, the laws provide for the workers a series of fringe benefits, such as vacation, Christmas bonus or the 13th month, and others. However, these are sometimes bypassed by the construction companies by using the method of subcontract instead of direct hiring.

Also, the Honduran labor laws allow unions. Even more, there are some powerful unions already in the country such as the government employees, parastatals, some industries and the banana workers union. However, there is no labor union in the construction industry.

3. As was explained before, there are no training programs used by most of the employers. However, all of the interviewers realized the importance of training; further more, they are aware that in the case of a construction boom, qualified labor would probably be hard to get and they said that they would support a serious training program if it were to be undertaken by INFOP under an agreement with CHICO, since they should be the ones stating the requirements for the training courses. Some of them even said that they would be willing to keep on the payroll those employees undergoing training, as long as they could be assured that the employees will return to work for them for at least

a specific period of time.

Interviewees also acknowledged that management methods could be improved by giving the proper training to management and that they would also welcome human relation training.

It was also accepted as a common practice the use of subcontracting the labor needed to do some of the work. However, they claim that this is done to facilitate the management of the project and not in order to avoid paying the fringe benefits required by the present labor laws.

There is no construction labor union in Honduras and none of the interviewees wanted one. This is mainly due to the negative impression management has regarding the experience in Honduras with the various labor unions.

4. The lack of formal education, low skills, and few training programs put the labor force in the construction sector at a disadvantage.

The degree of absenteeism is high, so is the abuse of alcohol, the quality of work often leaves a lot to be desired and the rotation is high.

It is in the worker's best interests to become part of a sort of permanent cadre of employees of a specific company in order to assure himself more stable work conditions, the fringe benefits and better treatment in general.

The lack of an organized labor union and an officially agreed upon price list for the different works, permits some practices by the companies which are not necessarily in the best interest of the workers. It is common for the workers to cut their wages in order to get work when the sector is in a recession and unemployment is high.

It will probably be a long time before a labor union can be formed in Honduras. For this to happen it will take a complete change of attitude on the part of both labor and management toward each other.

5. There is a very limited labor market information system in place. It is known the approximate number of people working in the sector. However, it was not possible to obtain a breakdown by skills. There is no source of information on jobs openings.

I. Recommended Action

1. Immediate

a) Proposals to increase private sector participation in INFOP's Board of Directors should be encouraged to assure that the training programs will address the needs of the private sector. There should also be a closer working relationship between INFOP and CHICO.

- INFOP's training program should be sectorialized as should its budget allocation. This would not only allow the specialization of the courses, but assure that each sector receives from INFOP in the same proportion that it contributes to that institution.

- The training program should address the following skills; foreman, bricklayers, carpenters and steel workers.

b) A training program should be started for mechanics and electricians for using equipment and should be supported with CADERH.

- For the execution of this program, should enlist the technical assistance of local heavy equipment dealers, such as the Caterpillar and Komatsu. It could build new training facilities, especially in the rural areas.

- This training should also cover, in addition to the technical aspect, the maintenance issues and safety and environmental concerns.

- For this particular part of the program the assistance of the USAID is key, since CADERH is a private, non-profit organization and by law does not receive any contribution from the government.

c) More support should be given to those vocational schools which are known for good work in the vocational training sector; such as Don Bosco and a few others.

d) An intensive training plan should be undertaken in conjunction with CHICO to improve various aspects of the sector, such as:

- The labor/management human/work relations and social awareness, presenting courses to both management and labor.
The use of Universities would be advisable.

- New construction technology should be introduced to the Honduran contractors. USAID could be pivotal in obtaining the assistance from US

organizations related to construction such as the American Society of Civil Engineers, ASCE, the Organization of Contractors, the Association of Retired Executives, universities and other institutions closely related with the construction sector.

- The management capabilities of the construction companies, especially in the financial, administrative and planning area need help. The use of INCAE in addition to local universities would be advisable.

2. Medium-Long Term

a) A mid and long term program should be developed to raise the level of basic education of construction workers. This could be best done at the construction sites with the coordination of CHICO and the full cooperation of the construction companies.

CHAPTER VII. TECHNICAL & MANAGEMENT TRAINING SYSTEMS

A. Summary

The technical skills training system in Honduras is a fragmented enterprise comprised of institutions which provide training services with little effort at coordination by course, eventual employer or geographical location. Most trainers try to transfer knowledge and skills but without industrial training standards. This is perhaps the greatest weakness of these institutions.

Consequently, satisfaction of private enterprise employers with trainees is generally low. Further, given that there are approximately 12,000 private enterprises in Honduras with the potential to absorb trainees and/or participate in the training process, the involvement of business in training generally must be said to range from disinterested to nil.

Since the lack of industrial training standards impacts the formation of training competencies within each sector studied, this investigation found numerous deficiencies in the competencies for which training is provided, regardless of institutional provider. Curricula, however, appeared to be satisfactory and well-designed.

On the other hand, instructor performance was determined to be the second most critical weakness of the national training system.

The training system in Honduras suffers from a lack of training centers and trainer manpower to meet the current and emerging demands by the general population. Further, entry-level training, which has the capacity to serve the majority of training candidates in Honduras, must be balanced with skill-upgrade training for those currently employed, who constitute the national base of technicians, craftsmen and supervisory personnel.

Most difficult to overcome, however, is the low level of formal education of the workforce and its impact upon the training system. Widespread illiteracy also impedes the ability of training institutions to train.

As for other sectors of the formal education system, the secondary system feeds the university system more than it fulfills demands for advanced technicians. The university system, too, fails to contribute meaningfully to training sector demands by private enterprises in that they produce generic engineering, tourism and supervisory graduates, those graduates enter their profession without any form

of industry-specific competency-based knowledge.

Therefore, private enterprise in Honduras is faced with the following: 1) a manpower pool dominated by a fourth grade educational level, 2) university graduates who do not have job experience, and 3) a dearth of technicians in the middle who are responsible for keeping the "wheels" of production turning but lack training when technology changes.

B. Profile of the Trainee Pool

Fifty-percent of the eligible Honduras work force has not finished primary school and over 80% has not completed high school, putting the average education level of the training candidate at about grade four. Of the entry-level candidates for institutional training slots, the age of which range between 13 years and 18 years (almost 780,000), only 35% are enrolled in school while 65% (almost 500,000) are either unemployed, under-employed, waiting for training or are in one of the 45,000 training slots which now serve the general population. Indeed, of all age groups, the greatest *population* demand for training is in the 10 - 19 year range which comprises about 36% of the population, males and females being almost equally represented.

The 20% of the Honduras population which is now in primary school will place further burden on the training establishment over the next several years, while the 35,000 students per year which drop out of primary school pose a more immediate challenge for vocational training institutions.

Training could certainly alleviate matters of poverty for the typical entry level training candidate who earns L.340 per month. Government statistics indicate that the salaries of trainees with two years of technical training increases by L.750 per month over the below poverty level of L.340 per month.

Of the economically active population, which numbers approximately 1.7 million, 1.3 million, or 77%, need either entry level or advanced training. This number is expected to increase by 64% to over 2,000,000 people by the year 2000. Further, 55% of the 1.7 million cited above are employed while 45% are unemployed or under-employed. However, technical training programs in Honduras produce only about 35,000 graduates each year, of which most are not entry level trainees. Consequently, vocational training is meeting only 2% of the needs of the workforce.

C. Quality, Relevance, Responsiveness and Efficiency of Education and Training Systems in Preparing Current and Future Labor Force

Ministry of Education Primary Education Program. The Ministry of Education employs 28,000 instructors solely in the primary school area, the largest feeder of students into the national training system. Teachers are reported to spend only 50% of their time in actual instruction - which is often delivered to between 4 and 6 grades of up to 40 students. Although classrooms are usually over-crowded and too many grade levels are represented, the primary teaching profession is known to worsen the problem by taking advantage of their being the most autonomous branch of the teaching profession. Without central office supervisory controls or community sanctions, some primary teachers tend to do what they like - sometimes not reporting to work and ignoring what has, until the recent past, been sluggish traditional curriculum formats.

Primary school teachers also are found to be under-trained by the twelve high schools which provide teacher diplomas to the 3,000 teaching graduates each year. Teacher education may be responsible for the problem of 20% of all first grade students repeating and causing massive bottle necks at the first grade level, where sometimes ten year old students can be found. Simply the age disparity between students in the first grade is said to contribute to early dropout by discouraged, older aged students, the same phenomenon being cited for all other grade levels, especially through grade four, at the rate of 35,000 students per year.

Training institution, notably INFOP and CADERH, make an effort to provide pre-entry educational services for new trainees. These programs are of short duration - two weeks to two months - but are not sufficient or appropriate when it comes to elevating a fourth grade education to a ninth grade education - which is the standard desired for many entry level technical school trainees.

The Ministry of Education has labored to overcome primary education bottlenecks to student entry into technical training schools. Most notable are their efforts through the Primary Education Efficiency Program (PEEP). PEEP has attempted to reorganize the curriculum into modularized units to facilitate self-paced instruction for students in grades 4, 5, and 6. Sixth grade graduates have increased by 56% and dropouts have decreased by 32% over the eight year term of the program.

Further, the USAID financed Basic Education & Skills Training (BEST) Project with the Ministry of Education (MOE) has been designed to assist the MOE in providing more flexible and alternative basic education delivery systems for out of school youth and young adults. The MOE's alternative basic education delivery system will focus on leading learners up to a ninth grade education in order to tie them into an awareness of, and capacity to enter, technical training.

The MOE's goal is to lift 250,000 students to the ninth grade educational level before the year 2000.

The World Bank is also proposing a program with the MOE to focus upon teacher education at the primary school level, through primary grades. The program is extensive and its impact could be felt within the next three to five years. PEEP efforts are also credited with having made improvements in student achievement test scores. These favorable results may not be felt at the training level for a number of years, given the numbers of illiterate already in the economically active population.

Ministry of Education Vocational Program. The Ministry of Education is no longer a major player in the provision of technical training in Honduras. With the exception of its three major technical high schools in San Pedro Sula and Tegucigalpa, MOE vocational high schools and "polivalentes" are limited in nature, slimly equipped, with instructors who generally lack industry experience and with technologically outdated curricula. Given the foregoing limitations, these centers logically direct themselves more toward pedagogy and theory than toward practical work environments and gear themselves for the movement of students into the national universities. Although they hold potential in terms of interfacing with other providers of technical training in order to provide more thorough or extensive training, they will remain outside the interests of private enterprise consumers of technical talent until they do so.

Municipalities. Municipalities in Honduras are playing increasing roles in the provision of training to the population, usually in the areas of adult education and social betterment for the poor and uneducated. They are also participating more in providing a setting for new and sophisticated training programs entering the community. In that municipalities generally do not employ highly professional personnel, and their funds are always limited, their greatest potential may be in the provision of training facilities, sites for the construction of training facilities, student transportation services and publicity/advisory/ enrollment outreach services to their communities.

University Jose Cecilio del Valles & University Tecnologia Centroamericano. These two small universities are the only two in Honduras that offer courses in tourism. Each graduates only about 20 students per year. The reputation of tourism as a less prestigious career field than law or medicine along with a relatively small tourism industry in operation in Honduras, are cited as causes for low enrollments. Instructors, however, are of generally high academic credentials and almost all have had direct experience in tourism. University administrations voice a determination to maintain their tourism programs in that they see the programs gaining wider acceptance as tourism grows in the country.

Centro de Utilización y Promoción de Productos Forestales. CUPROFOR is a new NGO funded by the British and focused at providing assistance and training at the basic level of wood product manufacturing - i.e., band milling, lumber stacking, kiln drying, lumber movement, etc. Within this area much technical knowledge is available which directly impacts the utilization by upstream furniture and volume wood product manufacturers. Although the program will not be fully implemented for another year, administration is highly interested in fulfilling a role as a supplemental trainer for existing technical schools which teach wood production skills.

Public Universities. The public university system of Honduras is the least active entity in technical skills and management training. University involvement has typically been in the provision of short seminars to industry outside of any coordination with technical schools, and on academic rather than skill levels. Curricula are generally non-existent in the delivery of such seminars. The public universities could play a valuable role in technical skills and management training, however, even if at the theoretical or pedagogical levels. There needs to be, however, a strong bond between technical school instructor and university provider in order to insure that higher level information adds meaning to the technical information being imparted to the student by the technical school.

Instituto Nacional de Formación Profesional. INFOP is a governmental agency which receives 82% of its financing from a one percent employer tax. Private enterprise training contracts as a source of funding are almost nil. INFOP is the largest provider of technical training services in Honduras, offering about 3,000 courses and producing about 30,000 graduates each year primarily from two major metropolitan locations - Tegucigalpa and San Pedro Sula. Most trainees receive skill upgrading training. While training does not always meet employers' needs, all categories of training offered by the institution are far exceeded by demand and the number of enrollment berths is insufficient.

The institution is often cited by industry employers for failing to graduate students who can perform work tasks. Many of these complaints are lodged in INFOP's inability or unwillingness to revise competencies found in the modern workplace. The competencies upon which INFOP trains were determined more than fifteen years ago without significant re-analysis since that time. For this, INFOP has suffered a severe decline of interest by industry in its training programs. The danger INFOP faces by not investigating and implementing reforms lies in Article 25 of the Honduras tax law which could allow consumers of training (employers) to take a tax credit against the 1% mandatory training tax on payrolls (which normally goes to INFOP) in exchange for enlisting other, non-INFOP, providers of training.

INFOP has yet to suffer from other providers of training infringing upon its

financial base. However, INFOP has made some effort by offering responses to industry complaints of its services via widely publicized objectives to improve its performance. No action has been taken by INFOP to address the heart of its problems, the development of standards for training.

INFOP's bureaucracy, beginning with its highly politicized board of directors, is often cited by employers as the source of low industry acceptance of the institution's training products. The system appears also to break down at the bottom rungs of the organization - at the instructor level. Instructors at INFOP spend 11 weeks on 16 modules of trainer training, including supervised practices. Typically instructors carry some experience and a secondary education. Once hired, however, trainers suffer from low pay. This lowers their motivation and their tenure to around two years - the same amount of time it takes to process a student through a standard job-entry-level training program.

Centro Asesor para el Desarrollo de los Recursos Humanos de Honduras. CADERH is a non-governmental training operation supported by grants from governmental and non-governmental organizations and with the mandate that 100% of its operations be supported by student fees, sales of training products or training contracts with the private sector. Although CADERH is barely twelve years old and has neither enjoyed luxurious nor certain funding, the organization currently produces about 2,500 graduates each year with an additional 3,000 trainees being trained each year in a network of training centers sponsored by PVOs and municipalities which have been assisted by CADERH over the past decade. This network is impressively broad and de-centralized throughout Honduras. CADERH and these training centers offer 563 course modules over 26 trade areas. Projections are for a total of 30 geographical dispersed centers which will produce 8000 trainees per year by the year 2000 - admirable but still far below the national training demands projected for the year 2000. Most trainees are entry level full-time, but CADERH has also developed an entry level part-time program and is currently trying a part-time skills upgrade program.

CADERH has made a sustained effort to work closely with private industry and form competencies which are relevant to industries. The institution has received citations from industry for providing relevant training which serves real-world in-plant jobs. The institution takes advantage of its highly regionalized and independent centers to work on the concept of "client industry" rather than "the industry" and there has gained most of its prestige. Even though CADERH has won wide acceptance from industry for the trainees it produces, the institution needs to move forward from its current strength, i.e., client based competencies, to a future based upon industry training standards.

One current asset realized by CADERH is its small executive/central office support system--one geared to work on tight budgets and uncertain funding.

The major weakness in the CADERH system appears to be in the area of instruction. Instructors at CADERH usually have sixth grade or incomplete high school education. Within a few weeks, however, the instructor has completed a modularized trainer training program which puts him on the training shop floor with limited practice and subsequent in-agility as an instructor.

CADERH has set its policy that instructors are highly involved in student in-center time with equipment and in "in-plant" time with client-industry equipment. For this, CADERH trainees have in large part made successful transitions between training center operations of one level to employer operations of another level sufficient to earn employer satisfaction.

CADERH uses the modular instructional process coursework, into the training shop and into the businesses. The modular curriculum process is expensive in comparison to traditional instructor delivery processes where the instructor is present to modify content. Still, modular curricula compensate in part for instructor time and costs in terms of flexibility of student movement through material, the volume of training graduates that can be produced and the establishment of certification exams closely tied to the material learned.

CADERH needs to invest in regular curriculum revisions based upon revised in-plant competency findings. The cost of curriculum revision reduces CADERH's willingness to conduct regular competency evaluations (which inevitably require curriculum revisions). However, without such revisions, CADERH will find itself producing graduates who cannot handle the modern equipment of the employer, regardless of instructor capabilities and regardless of how sophisticated certification exams of trainees are designed.

The CADERH facilities are of relatively good quality, sometimes of excellent quality. These are primarily a result of CADERH's newness. CADERH should plan its training programs at all levels with an awareness that by the year 2000 its facilities and equipment might well be considered "old" and that its instructional program must compensate for outdated facilities and equipment. CADERH will continue to need close relations with consumers of its training products, provision of training in relevant competencies and, eventually, the use of external industry training standards for responding to global industry demands which will give the institution the capacity to produce a meaningful level of trainee output on a national level.

D. Quality, Relevance, Responsiveness and Efficiency of Education and Training Systems in Meeting Honduran Labor Force Requirements in Key Sectors

The foregoing "survey of education and training systems for preparing the

current and future labor force of Honduras" has attempted to identify general strengths and deficiencies of the nation's training institutions as relate to the four sectors under study: Industrial Maintenance, Construction, Wood Product Manufacturing and Tourism. This section will explore training system strengths and deficiencies by specific category.

Industrial Maintenance. Only 5% of all training graduates in Honduras receive their training in the area of industrial maintenance, this usually at the entry level. The figure of 5% is an extremely low rate given that 18% of the GNP is in the industrial sector. Although available data does not allow for a determination of currently employed maintenance personnel who require skills upgrade training, data does suggest that approximately 16% of the sector's work force desire upgrade opportunities. Overall industrial consumption has been roughly projected at 250,000 trained workers between 1993 and 2000. Although industrial maintenance represents only a portion of these students, the current graduation rate of approximately 2,500 industrial maintenance students per year, or total of about 16,000 by the year 2000, verges on insignificance when compared to demand. Complicating the scenario of training in this sector is the low education levels of students. Approximately 97% of graduates are below the high school level in an occupational area where demands of literacy, especially in mathematics, is essential.

Further, the training provided to students of industrial maintenance suffers on the one hand from a too broad and superficial approach and on the other hand lacks training in important competencies. For example, INFOP trains in a wide number of maintenance topics from lathes to refrigerators, to students who only need to know how to repair a sewing machine, and most of which will find employment in a small one-system company which represents 80% of the industrial sector in Honduras. CADERH is better at topic specific training in industrial maintenance, primarily because it lacks in-school machinery and must focus its efforts on equipment in client plants. This necessity also drives CADERH's ability to provide skills upgrade training for employees, but its level of upgrade training does not begin to meet actual demand. Further, a close review of the sectoral report on industrial maintenance shows that in the area of "Metal-Mechanic Repair/Maintenance" alone, seven of the twelve competencies are not being addressed by CADERH nor any other Honduran training institution providing entry or advanced levels of training.

One of the most common negative observations by users of the industrial maintenance sector is directed at curricula which are too long in duration and do not provide enough hands-on practice by the student. Here, external industry training standards, by machinery category, could be of great help.

The second most common complaint of users of industrial maintenance

trainees has to do with poor on-job performance of graduates. Close study of this complaint usually indicates problems cited above: generalized training, un-addressed competencies which sometimes require up to four years of in-plant experience to compensate for the low educational bases of trainees.

There is a need to integrate CADERH and INFOP training programs with both entry-level long-term and consumer-specific short-term training in mind. Further, programs should be modified in order to give more opportunities to experienced employees in skills upgrade training. ANDI, Asociación Nacional para Desarrollo Industrial, could be a major player in tying industrial maintenance training into actual production. The industrial engineering departments of the national university system could be of great assistance in rounding out training with theory and pedagogy, as could certain high school vocational programs. Industry could be more intensively involved in helping all institutions form industrial training standards and in forming complete competencies, while the anticipated reforms in the national primary school system should broaden the base of potential candidates.

Tourism. Tourism is experiencing a 12% annual job growth rate which has the potential to double or triple by the year 2000 based upon new initiatives undertaken by the Institute of Tourism. The institute projects the construction of 15,000 new hotel room within the next three years, more than a 200% increase over the current 7,000 rooms, which will command 53,000 jobs by the year 2000. However, the prognosis for filling these positions is worrisome for the industry in that the labor force for tourism service workers now relies on a fourth grade education and salaries which pay between L.14 and L.22 (\$1.55 and \$2.45) per day. At this time, skills are largely job-learned and incomplete and turnover is high - critical considerations for an industry projected to provide more than 13% of the Honduras GNP by the year 2000.

INFOP offers a course of study in tourism in one centralized (Tegucigalpa) and two satellite (San Pedro Sula and La Ceiba) locations. Of the competencies listed in the sectoral study of tourism, only two of the six are being addressed by INFOP. Six others are not even being considered. CADERH, on the other hand, has taken no action to enter the tourism training market - a probable strategic mistake given the organization's capacity for non-centralized and geographic distribution of training programs - especially since CADERH might be able to benefit from the 1% tax levied upon all employers for training services by the government of Honduras (see Article 25 of the INFOP Law).

Consequently, the state of training for the emerging tourism market in Honduras is inadequate at all levels, beginning at the level of core competency determination and worsening exponentially with every step upward in the delivery and outcome of training. To emphasize the lack of consideration that training

institutions have given to industry consumers, the Hotel Association of Honduras refuses to participate with the INFOP tourism program, preferring the penalties of bad service and high turnover of untrained service workers to the higher priced, poorly trained and skewed customer service views of INFOP trainees. In this type of scenario, devoid of a logical list of competencies which could be constructed by even the novice tourist, discussions of curriculum quality, delivery methodology or instructor capability become meaningless. Training for the tourism sector needs to be completely re-thought by the two major potential suppliers of service worker training - INFOP and CADERH.

At the same time, University Jose Cecilio del Valles and UNITEC need to more actively promote the management level education they offer in the tourism sector. Uncertainties by these two institutions about investment in low volume courses should be abandoned in favor of emergent student demand, although such demand may not be realized for another three to four years. Importantly, certain curricula need to be de-theorized - ex., from "computer data base operation" to "registration desk computer data base operation" - and a new genre of tourism-tailored courses installed in the curriculum - including aspects of customer service management.

There are adequate resources in Honduras to form a meaningful program of tourism training. Without a consolidation of intent by all interested parties, the tourism industry in Honduras will grow very slowly, risking foreign exchange and a significant portion of the GNP. A logical starting point upon which to leverage one of the greatest potential contributions to foreign exchange is the establishment of external industry standards for training in the tourism industry. The establishment of cooperation between the Honduras Hotel Association, Tour Operator's Association, Association for Hotel Workers and the Tourism Chamber of Commerce with CADERH, INFOP, University Jose Cecilio del Valles, UNITEC, and the management department of the national university system could very quickly form a front through which tourism training could be delivered for the benefit of all institutions. Such a consortium could leverage upon industry standards to implement contractual arrangements for the provision of training by the various providers listed above - each provider contributing meaningfully to needs of trainees, upgrade of existing workers, and integration of management staff with the day to day operations of the tourism industry.

For sure there is motivation to achieve the foregoing. Hotels on Honduras seek "star" ratings in order to attract customers. The star rating system long familiar to tourists from developed nations, could easily include "level of training of employees" as a credit-accruing variable, hence creating a demand for training by tourism-oriented businesses which seek high accreditation in order to attract high occupancies.

Wood Products Manufacturing. The wood products manufacturing industry, especially furniture and cabinets, possess the capability to become as emerging sector. Already the industry employees 50,000 workers who produce more than 7,000 secondary, or manufactured, classes of products. Efficiency is generally low in tandem with the below fourth grade literacy level of employees. Many cannot measure in inches or centimeters. Although the industry has tried to compensate for illiteracy by using highly specific assembly line processes, the need for trained personnel not only remains, but grows - as do export orders which the typical manufacturer cannot meet.

Unfortunately, the competencies which the typical wood product manufacturer would like to see in his business are not generally available through the instructional processes of training providers in Honduras. For instance, at the time of this report, neither INFOP nor CADERH provide courses in aspects of the behavior of wood based upon inherent moisture, production design for large scale furniture operations, quality control, or advance technology demands which spin out of volume production environments for machining, drying, gluing and finishing.

CADERH, to its credit, will open in early 1995 a training facility geared toward the volume production of wood products - albeit certain of the competencies listed in the preceding paragraph have yet to be evaluated or converted into curriculum. INFOP, the fifteen centers previously assisted by CADERH, and the MOE continue to operate training programs in the area of small-shop wood working. While these programs generally produce good wood workers ("ebanistas"), who can fabricate a line of kitchen cabinets or one dining room table at the rate of about one set every week, these programs are inappropriate for training workers for higher technology export companies which must produce in series and meet international efficiency and quality standards in order to compete. At the same time, the university system of Honduras is producing graduates who can draw a cabinet set or a dining room table but cannot make either.

The growing demand for high-volume production line plants, largely for export, has taught the industry the value of trained employees. However, even CADERH's contribution, when in operation and if all competencies are covered, will by no means meet current or future industry demand. Graduates of other centers will not make highly meaningful contributions to meeting top wood manufacturer needs until they learn operations through post-training, in-plant experience which, even on basic assembly lines, could require one year or more - at the financial expense of the employer and with the employer's dissatisfaction with what he would logically determine to be an ill-trained employee instead of a wrongly-trained employee.

There is a great need for INFOP, as the largest potential feeder of trainees into the wood manufacturing industry, to reconsider the real-world competencies demanded by the modern wood industry. Even before its program opens, there is a great need for CADERH to consider expansion of its wood products manufacturing program. Both institutions need to establish close linkages with ANETRAMA (Asociación Nacional de Empresas Transformadoras de la Madera, the national association of wood product manufacturing) AMH (Asociación Madereros de Honduras, the wood association of Honduras) and CUPROFOR (Centro de Utilización y Promoción de Productos Forestales, an English technical advisory and training institute serving the area between deforestation and manufacturing), with an eye toward establishing external industry training standards for volume wood production and thus validating competencies, resultant curricula and eventual trainee and instructor certification processes. Competition for the 1% employer gross sales tax should at least add momentum to CADERH's efforts to install an effective training program in this area. Otherwise, the tax revenues remain spent, but under the auspices of INFOP which can, and does, divert the income into any department it wishes, too often including administrative departments which do not contribute to competent trainees.

Residential Construction. Although the construction industry accounts for 7% of GNP, less than any other sector undertaken in this study, it is a labor intensive industry currently employing 70,000 workers and with the potential to rise significantly given economic improvements in Honduras which would most rapidly be seen in residential construction. There seems to be a fatalistic view by construction company owners toward large scale training for employees in the industry, given that 16% of the labor force typically has no education and 37% have never completed primary school. Only 2.6% have a high school education. Not only does the industry deal daily with workers who could not pass the minimum requirements to enter training even if they wanted to, but the industry has become accustomed to utilizing the lowest level of construction technology possible in order to exploit its low level of manpower and still profit.

Both of the main providers of training for the under-educated, INFOP and CADERH, have followed the mentality of business owners in the development of training competencies. Concentration on cement work is typical - i.e., how to lay bricks level on a wall, how to construct a concrete column or floor using rebar, how to mix cement by hand in a large pile in the middle of a busy thoroughfare. However, there is little or no training on how to scientifically mix cement for maximum strength under variations of climate, how to mix cement for and operate a cement pump or how to mix for cement truck discharge.

Nor is there training for emergent construction technologies needed to respond to a booming birthrate which will in the near term expect housing, or to industries which will demand warehouses. For example, both INFOP and

CADERH discount the value of hanging acoustical ceilings, hanging sheet rock, studding in walls with 2x4's, cutting and polishing terrazzo tile floors and numerous other shortcuts toward the high volume production of residencies and plants so well known in developed nations. Beyond these un-addressed training competencies, neither institution has remotely considered the concept of pre-fabrication as a construction alternative.

Certainly, the construction training system in Honduras suffers from its refusal to evaluate training competencies in the face of emergent demand for both public housing and business. Understandably the system wishes to respond to the primitive construction criteria to which construction firms have adapted as a means of survival in the face of cheap and untrained labor. However, the construction industry might soon abandon its view of dissatisfaction with institutional trainees just as it might abandon its low technology view of constructing buildings if there were a ready supply of manpower to use more modern methods. Herein lies one of the most challenging opportunities open to the training profession in Honduras - i.e., to drive technology through training instead of responding with training to passing technological needs.

Based upon observation of both training for construction and Honduras construction methods, it is improbable that existing training institutions in Honduras can rapidly posture themselves as proactive sources in the industry. If not, however, a more developed nation in the region may become the largest provider of pre-fabricated homes and businesses in the year 2010 and training institutions can begin responding with competencies to the industry at that future time. In the interim, the nation might continue to construct twelve inch walls where a six inch wall would suffice and depend upon cheap labor which exhibits chronic absenteeism, alcoholism, and turnover in order to construct a building in 12 months which would require only four months with adequately trained manpower using modern construction materials and equipment.

The construction training industry in Honduras at all levels needs to evaluate first the current competencies by which it trains students in construction practices and second the emergent and higher technology construction practices which are not currently being used on a broad scale - this latter with an eye toward provisioning and promoting said practices with trained graduates. The training industry would benefit by establishing strong relations with CHICO (Cámara Hondureña de la Industria de la Construcción), labor organizations and major existing unions where through the real and emergent demands of the construction industry might be logically assessed and industrial training standards current and future installed into the training process.

E. Recommendations

- All training institutions, individually or as a united front, should seek to establish relations with professional associations in their areas of operation in order to expand demand for training and placement of graduates as well as to establish industrial training standards to best prepare training graduates for service to industries.
- Minimize the barriers to training program entrance with more intensive and longer duration remedial education programs - perhaps in conjunction with the MOE's new alternative basic education delivery system and municipalities.
- Larger training entities should establish an independent operating division (or divisions) to promote interfaces with private businesses in the areas of:
 - Sales of training programs to businesses (in-plant or in-institution)
 - Expansion of the job placement program to a wider range of businesses both geographically and categorically.
 - Needs analyses of training competencies and the subsequent formation of training curriculum content as viewed by businesses, including the establishment of industry training standards.
 - Promote the use of progressionary skills upgrade programs by businesses.
- Limit the tasks of training instructors solely to functions of training:
 - Run two or three shifts of courses in the same training shop to serve more students.
 - Spend more time supervising students during in-plant practicums.
 - Spend more time in the certification process.
 - Spend more time in the remedial education process.
- In areas of wood product manufacturing, construction and industrial maintenance, expand competencies and curricula to meet emergent as well as traditional needs of the industries.
- Promote the use of (or sale of) in-plant industrial maintenance training programs with a focus upon industry-specific equipment - i.e., train a wood plant repairman how to repair saws, not sewing machines, and vice versa - in order to minimize training time and be responsive to industry-specific production demands.

- De-politicize the Boards of Directors of technical training operations by structuring with professionals from a representation of business and insure that the deployment of funds goes into more relevant and cost-effective training. Employ professional education/training administrators as directors with tenure which runs beyond changes of government.
- Posture training institutions as high technology leaders in Honduras. To the extent made possible by physical and financial resources and local industry demand, build toward courses of a nature considered technologically advanced for Honduras - ex., fuel injection systems, hydraulic systems, various electronic/electrical systems, advanced welding (MIG, TIG, and plasma), etc.
- Expand the range of courses offered by training institutions to keep them "in the marketplace" as flexible, responsive and nearby training sources.
- At the central office level, continue to actively search for outside funding to support developmental and social aspects of training operations, perhaps by hiring permanent grants and endowment management specialists.

F. Purpose of Study

The purpose of the technical and management component of this study has been to determine the quality, relevance, responsiveness and efficiency of education and non-formal technical training as such education and training impacts the industrial maintenance, construction, wood product manufacturing and tourism sectors of the Honduran economy.

In so doing, the study mandated a sector-by-sector analysis of the ability of current education and training systems: 1) to respond to existing skills needs through aspects of enrollments, core competencies, curricula, instructors, physical training facilities and evaluation criteria; 2) to foster favorable training outcomes through aspects of successful placement of trainees in work directly related to the training received and ability of the trainee to perform learned competencies sufficient to earn employer satisfaction; 3) to take advantage of various types of systems for financing training programs such as tax levies, governmental and non-governmental grants and incentives, and private enterprise training contracts; 4) and to interface with up-stream and down-stream training or educational linkages in order to optimize responsiveness and efficiency.

G. Methodology

The methodology established for the overall study was also employed in this component of the study, the more specific details of which are:

- A review of the planning, evaluation and statistical literature related to technical and management training activities in Honduras since 1985 (Annex 1).
- Assignment of searches by the Honduras Peace Scholars of current training data from sources such as SECPLAN (the national census and survey institute) and major suppliers of educational and technical training services in Honduras.
- The development of two questionnaires which addressed specific sub-aspects of the considerations cited in the Purpose of Study by training institution and by training product consumer.
- The administration of interviews with training center and private enterprise administrators and line staff and tours of their respective facilities.

References for Training and Education

Training institutions, the government of Honduras and international donors may also find the following references helpful for gaining a better understanding of training needs, activities and priorities in Honduras.

Final Evaluation of the Honduran Advisory Council for Human Resource Development, Devres, Inc., Washington, D.C., April 1994.

Estimación de Necesidades de Capacitación a Nivel Nacional, Sectores Económicos y Niveles de Empleo, INFOP, Tegucigalpa, Diciembre 1993.

Lineamientos Básicos y Estratégicos de Acción para la Conformación del Modelo de Modernización del Sistema de Formación Profesional, INFOP, Tegucigalpa, Honduras, Diciembre 1993.

1995 Marketing Plan, Honduran Institute for Tourism, Tegucigalpa, Honduras, September 1995.

Addressing Employment Needs: A Study of the Training System in Honduras, Kelly, Terence & Evans, David, USDA International Programs, Washington, D.C. 1985.

Resultados Operativos Centros CEFEDH, INFOP, Tegucigalpa, Honduras, 1993.

Honduras 1994-2000: Recursos Humanos y Las Perspectivas para el Crecimiento Económico, Van Steenwyk, Ned & Mejía, Marco Tulio, USAID, Tegucigalpa, Honduras, 1994.

Identification of Honduras' Training Needs for the Period 1990 - 1999 and the Development of a Training Strategy and Model Development Training Project, Muñoz, Adolfo H. et al, Development Associates, Inc., Arlington, Virginia, June 1988.

USAID - GEMAH Institutional Strengthening Grant, Renforth, William & Obaldia, Marcos G., Academy for Educational Development, Washington, D.C., May 1987.

Resumen Ejecutivo de la Evaluación Administrativa y Operacional del Instituto Nacional de Formación Profesional, USAID et al, Tegucigalpa, Honduras, Enero 1984.

Estudio de las Necesidades y los Recursos Existentes de Capacitación Gerencial en Honduras, American management Association International Division, New York, New York, Agosto 1984.

Un Estudio Sobre la Formación Profesional y la Capacitación Técnica Vocacional: Perspectiva de un Grupo de Empresarios Hondureños, CADERH y USAID, Tegucigalpa, Honduras, Marzo 1984.

Informe Estadístico Región Central, INFOP División de Planificación, 1993.

Education Development Discussion papers: Repitencia en la Escuela Primaria - Un Estudio de la Escuela Rural en Honduras, McGinn, Noel et al, Basic Research and Implementation in Developing Education Systems (BRIDGES), Office of Education, Bureau of Science and Technology, USAID, Washington, D.C., Agosto 1992.

Educación para Todos en el Año 2000: ¿Se Puede? ¿Cómo?, Euceda, Armando, Colección Escuela Morazánica No. 1 de Secretaría de Educación Pública de Honduras, Tegucigalpa, Honduras, March 1994.

Basic Education & Skills Training (BEST) Project Description Excerpts, USAID, Tegucigalpa, Honduras, 1994.

Determinación de Demanda Económica y Social por Servicios de Capacitación y Cuantificación del Deficit de Demanda Social por Estos Servicios, Yañez, Efraín Corea, Banco Interamericano de Desarrollo, Programa de Capacitación de Mano de Obra, Tegucigalpa, Honduras, Julio 1994.

Honduras 1994 - 2000: Economic Growth and Human Resources, USAID, Tegucigalpa, Honduras, February 1994.

Resumen Ejecutivo de la Instrucción Vocacional en Honduras: Programas de Capacitación Industrial, Artesanal y de Computación, CADERH & USAID, Tegucigalpa, Honduras, Octubre 1984.

Review of the Van Heusen/PROTEXSA Training Project, Kurt Salmon Associates, Inc., Atlanta, Georgia, April 1990.

CHAPTER VIII. RECOMMENDED ACTIONS

The previous chapters have each dealt with actions which the sector specialists have suggested for the strengthening of human resources specific to those sectors. These have also been summarized in the Executive Summary. This chapter will therefore integrate these suggestions into broad actions which training institutions and donors might take.

Principles Underlying Recommended Actions

This report has noted the inertia which repeatedly confronts training reforms in Honduras. Despite the needs articulated by business and government alike, it has been exceedingly difficult to reach agreement on common action that will benefit not only the Honduran economy and the Honduran labor force, but Honduran business as well. Yet, to be effective, any reform program of this nature must be invested in by business and labor alike. The Honduran government is severely burdened with basic economic and social dilemmas and cannot be expected to deal effectively with the specialized needs of individual sectors.

Future reforms of this nature, designed to benefit businesses and enable them to sustain rapid growth, cannot be left solely to the government. Hence, actions must be linked to private sector participation, guidance, and investment. The international donor community is often in a strong position to offer assistance that will benefit the private sector; the counterpart of this offer must be private sector action.

Similarly, the recommended program of action should be broadly inclusive of other institutions in Honduras that can make an important contribution to the training process. This group includes the university system, technical high schools, non-formal vocational training programs, and donor programs. It also includes the government organizations which most directly affect these sectors.

Immediate Options

Honduras has an excellent opportunity to influence positively the development of specialized human resources through the Basic Education and Skills Training (BEST) Project financed by USAID. The project is comprised of two elements. Component I: The Ministry of Education will focus on providing basic education

for youth and young adults who have dropped out of school at an early age and need basic skills to become more "employable" and "trainable" in vocational skills. A key conclusion of this report has been that most of Honduran labor is not yet "trainable" in several of the specific skills needed in the four sectors if industries in these sectors are to grow and compete. Component I should therefore focus in part on achieving the basic education capacity in reading, computational, and problem solving skills that will be needed to succeed in employment and industry-specific vocational training.

Component II has immediate and direct relevance to the recommendations made by the four industry specialists. This part of the BEST program relates to non-formal vocational education and includes funding for the creation of 15 additional training centers, which will be assisted by CADERH, as well as for the strengthening and renovation of the existing centers assisted by CADERH. The opportunity therefore presents itself to design several centers to address the growth needs of the sectors studied.

It is the view of the consultant team, furthermore, that CADERH should use these funds to leverage the participation of the private sector in a joint effort as well as to encourage the participation of other donors and technical assistance providers. The goal should be to create a focal point--a pole--around which industry and training providers work to address the needs of specific industries. The creation of 'National Training Centers' for tourism, wood products, industrial maintenance, and construction should serve to galvanize support for improving the skills base available to these industries.

The consultant team therefore recommends that USAID consider the creation of dedicated centers for each of these industries, both for the training of skilled labor as well as for the training of trainers. Several conditions should be considered:

- Joint or partial sponsorship of each center by the industry affected, such as the Hotel Association for tourism, the Wood Transformers Association or the furniture industry for wood products, ANDI for industrial maintenance, and CHICO for the construction industry. In each instance, agreements should be reached with these groups in terms of their participation and contributions to the center. These agreements might include direct use of the training programs, financial contributions or in-kind contributions in the form of training equipment, and participation in the formulation of training standards and curricula.

Industries might assist in the financing of these centers by exercising their prerogatives under Article 25 of the law creating INFOP to apply tax credits for their INFOP contribution to the new and existing centers. It should also be agreed that the financial structure of the center should be sufficiently

strong so as to pay trainers salaries at least equivalent to what they would earn working at the same level in industry. If not, it can be expected that the centers will be unable to maintain qualified trainers on their staff.

- Each new center should be governed by representatives of member industries or associations, plus other institutions that will participate in its activities, such as other donors, universities, etc. These governing committees will act as the principal forum for determining training needs and responses, acting as a sector-specific labor information network. Employers will make known their needs and standards through these governing committees, enabling the center to respond directly to the needs of its members.

The centers should be inclusive, rather than exclusive, and encourage the participation of universities and other research and training groups that can enrich and possibly participate in the training process.

- The centers should above all focus on the training of its trainers. To this end, they should solicit the technical assistance of many groups, including international groups and university departments specialized in these industries. Some centers may be dedicated heavily to training trainers to go into the field to train on-site (such as tourism, for example). Others which must train with specialized equipment will be dedicated to training both trainers and students at one physical site.

Centers should be physically located close to the industry and the labor pool they are intended to serve. Consideration should be given to the transportation issues facing trainees participating in the courses. In many cases, training will be best done on-site or in areas readily accessible to students.

Other Donor Participation

Honduras should endeavor to establish the new CADERH centers as industry poles which can attract assistance from many sources concerned with the future of the industry. The Honduran government is recipient of assistance from many donors, some of which could well be redirected to the new CADERH centers. Major donors in the region, such as the Inter-American Development Bank, might be persuaded to assist in meeting the financial needs of the centers, and/or providing equipment and trainers to ensure the centers' success.

Recommended Actions by Sector

The consultant team has recommended that in three sectors national training centers be established (and in a fourth sector it be considered) so as to act as a pole of training and technical assistance to the industry which, over time, can attract increasing levels of support from many sources. The nature of each center will differ, depending on its sponsors and the nature of its training activity, i.e., whether 'equipment-intensive' (as with industrial maintenance and wood products) or more 'process-oriented' (as in the case of a service industry such as tourism).

The following are actions to be considered with respect to each sector:

- **Tourism**

A "National Tourism Training Center", should be established in the area of prime tourism potential, either in San Pedro Sula or La Ceiba. Its focus should be on the training of trainers to be sent into the field to train at specific hotels and restaurants and other service areas, such as tourist reception areas like airports and tourist transportation companies.

Hotels and restaurants, led by the Hotel Association, should agree to use the center's services for a regular schedule of tourism training courses on site, in areas such as cooking, waiting, housekeeping, reception and front desk, accounting, and supervision. These consumers would be asked to subscribe to a regular schedule of training over the course of each year, with the trainer spending a substantial amount of time on the hotel's premises to conduct the training. The hotels themselves would provide input into the standards to be followed and the materials to be used.

The Tourism Training Center would adopt international training standards that will help the hotel, their clients, maintain or attain the desired hotel classification that the Honduran Tourism Institute will soon establish. The center will follow international standards currently in use in areas such as the Caribbean, Costa Rica, Belize, and Mexico so as to bring Honduran service standards up to international levels.

The Honduran Tourism Institute would transfer to the Center the technical assistance it receives from areas such as Mexico as a means to help strengthen the training of trainers by the Center. The IHT's efforts to adopt international hotel classification standards and make service personnel training levels a component of these classifications should contribute to stimulating demand for the Center's training programs.

- Wood Products

A center for the wood products industry should be established with the participation of the wood products industry, particularly the furniture manufacturing industry. The "Wood Products Manufacturing Center" would be governed by a board that includes representatives of the sector who would assist the center in determining the skills to be developed and the standards to be applied.

Participating companies would also assist the center with both financial and in-kind support (e.g., donation of training equipment). The companies could also take advantage of the tax credits available to them under Article 25 of the INFOP legislation, permitting them effectively to transfer their INFOP contribution to CADERH.

Because the new center faces the issue of the 'trainability' of incoming trainees, the board of the center should work to advise the Alternative Basic Education Delivery Systems (ABEDS) within the BEST project on the basic education skills required. The center should consider working with specific pools of students in the ABEDS program who show interest in the wood products industry to prepare them for entry into center programs.

Assistance from other donors and institutions should be solicited as a means of establishing the center as a pole for development for the wood products and furniture industries.

- Industrial Maintenance

Similar to the wood products industry, a "National Center for Industrial Maintenance Training" should be established with the support of leading industrial firms as well as the ANDI (National Association for Industrial Development) so as to attract broad support as a body dedicated to improving industrial maintenance in Honduras at all levels.

The governing board of the center, composed of training and industry representatives, would also have the responsibility for establishing training standards and curricula for training. The board would actively seek the financial assistance not only of other donors but collaboration with other programs in related areas. One example is the current UNIDO project in maintenance as well as existing programs at UNAH.

As in the wood products sector, the new Center for Industrial Maintenance Training must confront the issue of trainability of the workforce. Most Honduran

workers will not have the requisite basic skills to succeed in a vocational program in higher level industrial maintenance. Hence, the Center will need to work closely with programs that can prepare certain members of the labor pool interested in training in industrial maintenance to provide these programs with guidance concerning essential basic skills.

These programs might include the MOE's Alternative Basic Education Delivery System initiative (ABEDS) as well as INFOP, both of which aim at the level of the population that is lacking in basic education. An alliance with both programs might serve to identify and train capable and motivated candidates.

The Center's focus should be on developing a cadre of people throughout the country capable of corrective and preventive maintenance of more sophisticated mechanical and electrical equipment. The Center would offer structured training programs to form technicians (as opposed to repairmen) in electrical, mechanical, automotive, and electronic areas.

The Center would require capital equipment to use in its programs. A variety of donors should be sought, in particular industrial firms in Honduras with strong interests and stake in the existence of qualified personnel. The National Association for Industrial Development (ANDI) should be a key player in the new center and undertake to mobilize resources for the center. ANDI members should also commit to using the training services of the center and giving priority consideration to individuals trained by them. ANDI, and its members, should be advisers with respect to standards and curricula.

- Residential Construction

The consulting study of the construction sector concluded that residential construction techniques in Honduras are heavily labor-intensive without significant use of more advanced home construction technologies. Hence, the constraint facing the construction industry is less the current building skills of the workforce and more the adoption by construction companies of modern techniques and processes. The process of introducing new techniques is likely to be a slow one, both as a result of traditional nature of the construction industry in Honduras and the current recession.

INFOP remains the principal trainer of construction workers today, concentrating on carpentry, bricklaying, and metal bending and steel work operations. This operation will remain important to the industry in the future as well. However, INFOP's program should be more responsive to the industry itself. Revisions in INFOP's structure so as to 'privatize' its governance would be a step in the right direction. In particular, CHICO (the construction industry

association) should be a key influence in the management of this part of INFOP's program, with the ability to advise on standards and course content.

It would not be appropriate to design a new center for modern residential construction techniques if the industry's management is not prepared to utilize these techniques. At present the industry is demanding only bricklayers, carpenters, steel workers, and foremen, skills which are being provided by INFOP.

Training institutions and international donors should initiate discussions with CHICO, the construction industry association, to determine whether the industry is prepared to support and use an additional training center dedicated to training workers in higher skills for the construction industry. If that should be the case, a center could be designated in one of the larger markets, such as Tegucigalpa or San Pedro Sula, to work with CHICO and INFOP to fill the gap that currently exists. The new center would focus on construction equipment operation and maintenance as well as training higher skilled labor in more advanced construction techniques. Local heavy equipment dealers, such as Caterpillar and Komatsu, should be asked to participate in terms of training trainers and providing equipment for training in the center.

Finally, there will be important overlap between the center for industrial maintenance and a center for construction. Resources and equipment might be shared so that coverage throughout the country can be maximized.

APPENDIX

INDIVIDUALS INTERVIEWED

Chapter II: Honduran Labor Market

- Ned Van Steenwyck, USAID/Tegucigalpa
- Jeff Lansdale, USAID/Tegucigalpa
- Vicente Díaz, USAID/Tegucigalpa
- Víctor Paz, USAID/Tegucigalpa
- Don Harrison, USAID/Tegucigalpa
- Karen Milken, U.S. Embassy, Tegucigalpa
- Honduran Peace Scholars
- Ian Walker, UDAPE
- Joaquim Pagan, DGCE
- Romeo Silvestre, Romeo's Dive Resort
- Samir Galindo, Anthony's Key Resort
- Melvin Turner, Labor Attache, U.S. Embassy, Tegucigalpa
- Francisco Guerrero, Confederación de Trabajadores de Honduras (CTH)
- Jorge Ponce, Consultant to ILO
- Germán Leitzelar, Consultant to FIDE
- Alfonso Diez Mendieta, Director, Dirección General de Trabajo, Ministry of Labor
- Efraín Corea Yañez, UNAH

Chapter III: Tourism

Government

Instituto Hondureño de Turismo

- Ricardo Martínez

Private Sector Associations

Consejo Hondureño de la Empresa Privada

- Vilma Sierra de Fonseca, Directora Ejecutiva
- Joaquin Bulnes, Gerente de Desarrollo Organizacional

Cámara de Turismo

- Víctor Castro, Presidente

Asociación de Hoteles y Afines

- José María Agurcia, Presidente
- Daniel O'Connor, Junta Directiva

Asociación de Agencias de Viajes y Turismo (ANAVIT)

- Hector Díaz, Director Ejecutivo
- Marta Croasdaile, ex-Directora Ejecutiva

Asociación de Tour Operadores

- René Hernández, Copan
- José Humberto Funez, Viapsa Tour, San Pedro Sula
- Jorge Molanphy, Maya Tropic Tours, San Pedro Sula

Asociación de Trabajadores y Turismo

- Pascual García

Hotels

Tegucigalpa

- Hotel Honduras Maya, Enrique Albuixech, Gerente
- Hotel Plaza San Martín, Gabriela de Gutiérrez, Gerente de Operaciones
- Hotel El Prado, José María Agurcia, Owner/Reyna Carcamo, Gerente de Operaciones
- Hotel Alameda, Steven Resnick, Gerente

San Pedro Sula

- Gran Hotel Sula, Thomas Jacobsen, Owner, Manager

Roatan

- Romeo's Pesort Dive and Yacht Club
 - Romeo Silvestri, Owner
 - Margarita Bustamante, Gerente
 - René Bustamante, Gerente
- Hotel Bucanero
 - Rita Silvestri, Owner
- Anthony's Key Resort
 - Julio Galindo, Owner
 - Samir Galindo, Gerente
- Fantasy Island
 - Manuel Martínez, Gerente

Agencias de Viajes

- Trek Honduras
 - Marco Tulio Croasdaile, Gerente
 - Jorge Codina

Appendix

- Honduras Copan Tours
 - Oscar Díaz, Gerente
- Brenda Agencia de Viajes
 - Marta Croasdaile
 - Hector Díaz

Car Rentals

- Blitz Rent-a-Car, San Pedro Sula
 - Jorge Molanphy
- Sandy Bay Rent-a-Car, Roatan
 - Tony Guy

Dive Operators

- H20 Dive Tours
 - Marco Fortin-Metzgen, PADI dive center

Training Institutions and Universities

INFOP

- Maribel Espinosa

CADERH

Universities

- Universidad José Cecilio de Valle
 - Irma Acosta de Fortin, Rectora
- Instituto Superior Tecnológico
 - José Roberto Caceres, Rector
- Universidad Pedagógica Nacional
 - Pedro Saavedra Guerra

US Agency for International Development

- Ned Van Steenwyk
- Jeffrey Lansdale
- Víctor Paz

Chapter IV: Wood Products

Alastair S. Alston - Co-Director (CUPROFOR)
Centro de Utilización y Promoción de Productos Forestales
1era. Calle, 2da. Ave. N.O.
Edificio Paseo del Sol No. 7
San Pedro Sula

Appendix

Ing. Luis Abuso Trochez - Private Consultant
San Pedro Sula, Cortez 51-04-62

Ing. Renán Amílcar Mairena - Jefe de Normas y Control
Corporación Hondureña de Desarrollo Forestal (COHDEFOR)
22-43-46

Ms. Nereida Lima de Rodríguez - Gerente
del Bosque Productos, S.A.
P.O. Box 332
Tegucigalpa

Ing. René Serrano C. - Asesor Técnico Forestal
Asociación Madereros de Honduras
Edificio Italia, Apart. No. 5
Col. Palmira, Tegucigalpa, D.C.

Margret M. Harritt - Environmental Officer
Ramón Alvarez - Forestry Officer
USAID/Honduras/RD
Unit 2927
APO AA 34022

Ms. Melitina J. Martínez C. - Gerente Mercadeo
Honduras Plywood, S.A.
Apartado Postal 783
Tegucigalpa, D.C.

Mr. Carlos A. Granados
Instituto Técnico Santa María
Tegucigalpa

Mr. Efraín Corea Yañez - Economista M.S.
U.N.A.H. - Departamento de Economía
Ciudad Universitaria
Tegucigalpa, M.D.C.
Honduras

Mr. Justin Willingham -
Muebles de Honduras
P.O. Box 3852
Tegucigalpa, Honduras

Appendix

Omar Ramos Zelaya - Gerente General
Mobiliario Infantil (MOBINSA)
Carretera a Puerto Cortés, Km. 12.5
Contiguo a Industrias Corona
San Pedro Sula

Ing. Marco A. Raudales N. - Gerente General
David A. Raudales C. - Asistente Gerente General, Finanzas y
Cemcol - Cat Crédito
Apartado Postal No. 37
San Pedro Sula

Carlos Gerardo Ramírez G.
Ing. Administrador de Sistemas
6 Ave. y 10 Calle N.O. #84
San Pedro Sula

Joaquín Dieckmann - Gerente General
Derimasa - Derivados de Madera
Apartado Postal 563
Tegucigalpa

Norman García - Executive Director
Fernando E. Chinchilla - Oficial de Inversiones
Fundación para la Inversión y Desarrollo de Exportaciones (FIDE)
Apartado Postal No. 2029
Tegucigalpa

Lic. Claudia Arriaga Izaguirre - Gerente
Camara Hondureña de la Industria de la Construcción (CHICO)
Segundo Piso, Edificio Simón
Boulevard Suyapa, Tegucigalpa

David Valladares - Instructor Técnico III
Instituto Nacional de Formación Profesional
Apartado Postal 3235
Tegucigalpa

Chapter V: Industrial Maintenance

Jorge Ramírez
Jefe de División
INFOP - Miraflores
Tegucigalpa

René Girard
INFOP, San Pedro Sula

José Alas
Instructor de Mecánica
INFOP - San Felipe
Tegucigalpa

Gustavo Alfaro
Dorca de Gonzales
Asociación Nacional de los Industriales
Tegucigalpa

Jorge Trigo
Coordiandor de Reconversión Industrial
ONUDI
Tegucigalpa

Jorge Zelaya
Recursons Humanos
INFOP - Miraflores
Tegucigalpa

Ricardo García
Jefe del Instrucción Metalmecánica
INFOP - Miraflores
Tegucigalpa

Ingrid Vásquez
Técnico de Sistemas Educativos
Ministerio de Educación
Tegucigalpa

Ricardo Padilla
Asistente Técnico, Ministerio de Educación
Instructor de Educación Industrial, Tecnológico Bogran
Tegucigalpa

Appendix

Orlando Vazques
Economista
Cámara de Comercio de Tegucigalpa
Tegucigalpa

Ramón Hasbun
Director de CADERH
Tegucigalpa

Aldonsa Palma
Directora INICE
Tegucigalpa

Hugo Chávez
Jefe Dpto. Formación Industrial
INFOP - Miraflores
Tegucigalpa

Ricardo Suárez
Gerente de Planta
RAY-O-VAC
Tegucigalpa

Mario A. Leon
Gerente de Producción
Honduras Fosforeras
Tegucigalpa

José A. González Flores
Asistente de Gerencia General
DERIMASA
Tegucigalpa

Roberto Facusse
Gerente General
Textiles Río Lindo
Tegucigalpa

Jorge Rivera
Jefe de Planta
Orion Industrial, (industrial packaging)
San Pedro Sula

Gustavo Zuñiga
Jefe de Producción
Fábrica de Ropa Presidente Paz, (apparel - maquila)
San Pedro Sula

Nery Galindo
Jefe de Planta
Tapas de Centro América, (metallic products, furniture, caps, wood furniture)
San Pedro Sula

Luis Gonzales
Encargado de Equipos
CONDELTA, (construction)
San Pedro Sula

Nastali Santos
Sub-jefe Centro Industrial
INFOP
San Pedro Sula

Donato Valladares
Jefe de Instructores (área industrial)
INFOP
San Pedro Sula

Chapter VI: Residential Construction

Government Institutions

INFOP:

- Lic. Hector Borjas - Vice - Director
- Lic. Silvia de Isaguirre - Chief of External Cooperation
- Mr. Juan Andrade Barahona - Coordinator Construction Area.
- Ing. Jorge Ramírez - Chief Training Programs.

RAP-FOSOVI

- Ing. Luis Felipe Aguilar - Gen. Manager

SECPLAN:

- Lic. German Aguilar - World Bank Monitoring Projects Unit

Private Institutions

CADERH:

- Lic. Orlando Betancourt - Coordinator, Vocational Center Project.

Other:

- Lic. Efraín Corea Yañez - Private Consultant

CHICO

- Lic. Claudia Arriaga - Manager

Construction Companies

- Ing. Adan López - Manager, CONPLAN
- Ing. Leonel Juárez - Manager, Merrien & Merrien
- Ing. Erasmo Barahona - President, Constructores e Inversiones Barahona.
- Ing. Blanca Fortín - Vice-Manager, Servicios y Construcciones, SEYCO.
- Ing. Mirna Hasbun DelCarmen - Manager, Constructora Hasbun
- Ing. Jesús Simon - Gen. Manager - Constructora Simon
- Ing. Heriberto Retes - Gen. Mgr - Delmar
- Arq. Victor Cuadra - Gen. MGR - URBE
- Ing. Marco Antonio Raudales - Ge. MGR. - CENCOL (CAT. DEALER)
- Ing. Carlos Gerardo Ramírez - Vice-Manager - COTIZAR
- Ing. Ivis López - President - Nacional de Ingenieros
- Lic. Francisco Membreño - Gen. Mgr. - Constructora Saturno

USAID/Peace Scholars (construction working group)

- Mr. Ned Van Steenwyk - Project Officer
- Mr. Jeffrey Lansdale - Scholarship Project Manager
- Ing. Flores Pérez - Civil Engineer
- Lic. Gilda Eveline - Economist
- Ing. Lourdes Rodríguez - Industrial Engineer

Chapter VII: Training and Education

Efraín Corea Yañez, M.S., Honduras Economist
Lorgio Arturo Escobar, Jefe Centro Formación Industrial, INFOP
Katherine McCaston, Anthropologist Latin America
Washington L. Risso, Gerente Desarrollo Educativo, CADERH
Bruce C. Newman, M.A., Educational Consultant, IDEAS, Inc.
Hugo Chávez, Jefe Depto. Formación Industrial, INFOP
Martin D. Harrington, Tourism Specialist Latin America

Appendix

Petrona De Laura, Jefe Depto. Técnico, INFOP
Ricardo García, Jefe Depto. Mantenimiento Industrial, INFOP
Juan Andrade, Jefe Depto. Construcción, INFOP
Cristiana De Peña, Jefe Depto. Turismo, INFOP
Tony Delara, Jefe de Técnicos, INFOP
Claudia Arriaga, Director, CHICO
Augusto Aguilar, Ph.D., Executive Director, INFOP
Jorge Ramírez, Jefe de Programas de Capacitación, INFOP
Orlando Bertancourt, Vocational Training Coordinator, CADERH
Ramón Valladares, Executive Director, UNITEC
Víctor Castro, President, Cámara de Turismo
Marco Tulio Mejía, Former Minister of Education of Honduras, USAID
Brian Husler, Director of Artist Development Project, Peace Corps SPS
Nestoli Santos, Sub-Jefe Industrial Formación, INFOP SPS
Carlos Martínez, Director, Instituto de Turismo
Silvia de Isaguirre, Jefe de Relaciones Exteriores, INFOP
Raoul Barajona, Director, CADERH SPS
Seminar: El Futuro de la Capacitación de los Recursos Humanos en Honduras
Rosario Portillo, Training Coordinator, CADERH
Mariana Gonzalez, Division Recursos Humanos, Camara Comercio de Tegucigalpa