PA-ABG-543

AGENCY FOR INTERNATIONAL DEVELOPMENT
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ENTER INFORMATION ONLY IF NOT INCLUDED ON COVER OR TITLE PAGE OF DOCUMENT

1. Project/Subproject Number: 398-0249.1

2. Contract/Grant Number: PDC-1109-I-00-7119-00, Delivery Order #28

3. Publication Date: December 1990

4. Document Title/Translated Title: SKILLS DEVELOPMENT POLICY IN SRI LANKA

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6. Contributing Organization(s): CREATIVE ASSOCIATES INTERNATIONAL, INC.

7. Pagination: 73p.

8. Report Number:

9. Sponsoring A.I.D. Office: USAID/SRI LANKA

10. Abstract (optional - 250 word limit)

11. Subject Keywords (optional)
1.
2.
3.
4.
5.
6.

12. Supplementary Notes

13. Submitting Official: Derry Velardi

14. Telephone Number: (202) 966-5804

15. Today's Date: 1/14/91

DO NOT write below this line

16. DOCID

17. Document Disposition: DOCRD [] INV [] DUPLICATE []

AID 590-7 (10/88)

PN-ABG-543
ISN 69674

SKILLS DEVELOPMENT POLICY IN SRI LANKA

Report Prepared for the

United States Agency for International Development
Colombo, Sri Lanka

by

Terrence F. Kelly, Ph.D.
Carol J. Culler, Ph.D.

December 1990

Contract Number PDC-1109-I-00-7119-00
Delivery Order Number 28

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EXECUTIVE SUMMARY

This report provides an assessment of skills development policy in Sri Lanka, from the perspective of internal program efficiency (program design and implementation) and external program effectiveness (program impact).

The report indicates that Sri Lanka's current strategy for skills development appears to be somewhat inappropriate for achieving the objective of maximizing future economic growth. Existing policy is decidedly "equity-oriented," i.e., driven by the objectives of reducing unemployment and alleviating poverty. While skills development can assist in improving access to future earning opportunities, it turns out to be rather ineffective in redistributing current incomes. Skills development does not create jobs (and subsequent incomes); it only allows them to be filled. Unless there is excess demand for labor (unfilled job vacancies), or downwardly flexible wages, the short-term effects of training or vocational education can be at best to redistribute unemployment or, at worst, to exacerbate frustrations. Therefore, current policy has been somewhat misguided, in the sense of trying to use skill-development programs for purposes for which they are ill-suited.

The result of this equity orientation has been a proliferation of underfunded institutions (nearly 3000), staffed by underpaid instructors and teaching curricula designed largely in isolation from the needs and realities of the labor market to students who have very little real interest in learning a trade. Placement rates for passed-through graduates of training institutions are low: more than 50% of those who successfully negotiated some training or vocational education program in 1983 remained unemployed by 1985. There has been a general but cumulative deficiency in labor demand, relative to the increasing number of job seekers, in recent years. The cumulative effects of political and ethnic unrest over the last seven years have significantly dimmed the labor market outlook as foreign investment has fallen and the capital stock--both physical and human--has eroded. Offsetting or corrective policy has been constrained by mounting budgetary and trade deficits. The infrastructure necessary to support the accumulation of capital and technology has seriously deteriorated, and there has been a contemporaneous "skill drain" to foreign labor markets.

Although there is a mismatch between the outputs of the skill-development system and the requirements of labor markets, it is not so much a mismatch of skills as one of attitudes. A significant but unknown number of young people seem to prefer to wait in the unemployment queue rather than accepting what they perceive to be low-status jobs. Public policy (food stamps, preferential hiring of the unemployed by the Government, and stipends for vocational training) appears to be supportive of this waiting game.

Employers, having been bypassed in the process of policy formulation, have cut themselves off from the outputs of skill- development programs. Survey results indicate that employers are generally unaware of what happens in training and vocational institutions and are predisposed to keep it that way. Respondents felt that their equipment and production processes were so unique that they could not trust outside training for first-job hires. Several employers responded: "Just give me someone who is motivated and trainable, and I'll teach him what I want him to know."

In recent years, private businesses have had to deal with their own mounting problems: increased taxes to support defense and transfer expenditures; stagnation or decline in consumer demand and investable funds; price controls; constantly changing Government regulations; and a deteriorating, inadequate infrastructure. Private-sector adaptations to these reinforcing constraints have hardly been conducive to socially-productive human capital investments. Where feasible, employers have shifted to low-skilled production techniques, overstaffing to account for absenteeism and low productivity, scheduling that allows time for delays, the breaking down of tasks into their simplest components, and low wages and selling prices. While wages are low, unit labor costs are not. The few skill investments that have been made are in firm-specific human capital, not in industry-general human capital.

There are a great many steps that could be taken to improve the skills-development system in Sri Lanka or to promote greater private-sector participation in the process. The options range from the general (levy-grant system with tax credits for training) to the specific (technical assistance from larger to smaller firms; the upgrading of one teacher training college to a polytechnic school). Funds are in shorter supply than are good ideas. The essential point is that a great many preconditions must be satisfied before any of the possible improvements are likely to be effective. Rationalization of the compensation system (wage policy) would be one such precondition. Effective partnerships--whether between the public and private sectors or among different ministries within the public sector--presuppose a certain degree of trust and commonality of purpose. For the moment, these appear to be lacking in Sri Lanka, so the symbiotic benefits of policy, or returns to scale, go unrealized.

The demand for skills development should be looked on as a derived demand, derived, ultimately, from the services, products, and incomes those skills can generate. Current programs do not appear to be guided by such economic growth objectives. They appear, rather, to be a reaction to past macroeconomic failures and thus poorly positioned to fuel future macroeconomic success.

Admittedly, policymakers currently face a logical conundrum regarding skills development. Economic growth can be facilitated by anticipatory human capital investments, yet growth prospects need to brighten before such investments can be induced. It is the view of the analysts who prepared this report that the logical starting point should be with business development, i.e., picking a few promising growth (export) areas, identifying constraints that now appear to be inhibiting that growth, and setting about to relax the constraints. Skills may be one such constaint, and skills development policy thus has a supportive role to play in the process.

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	Mr. Gajaweera Director of Training Institute for Construction, Training, and Development

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PRIVATE

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Jinaratana Technical Training Center (Buddhist)	Mr. Dunsen de Silva
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Employers Federation of Ceylon	Diyanesh Rajaratnam Assistant Secretary General
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Ceylon Workers' Congress	

DONORS

FRG Apprenticeship Training Institute	Mr. Stingle Acting Project Manager
Ceylon German Technical Training Institute	Mr. D. S. Adhikaram Director
Japan National Youth Center, Maharejen	Dr. Mediroche Deputy Director
Internal Labor Organization	Mr. Phil Neck Deputy Director Regional Office for Asia and the Pacific

LIST OF ACRONYMS

ADB	Asian Development Bank
ATI	Apprenticeship Training Institute
CWC	Ceylon Workers Congress
FTI	Foreman Training Institute
ICTAD	Institute for Construction Training and Development
ILO	International Labour Organization
MOE	Ministry of Education
MOHE	Ministry of Higher Education
MOYA	Ministry of Youth Affairs
NAB	National Apprenticeship Board
NAITA	National Apprenticeship Industrial Training Authority
NGO	Non-Governmental Organization
NTTTC	National Technical Teachers Training College
NYSC	National Youth Services Commission
SIDA	Swedish International Development Authority
TC	Technical College
TTI	Technical Training Institute
UNDP	United Nations Development Programme
UNESCO	United Nations Educational Scientific and Cultural Organization
USAID	United States Agency for International Development

I. INTRODUCTION

PURPOSE AND SCOPE

This report, prepared for USAID-Sri Lanka's Program Office, is intended to serve as background for the next Country Development Strategy Statement. Other such background papers have been prepared on the topics of national budgets, poverty, and labor markets. This particular report addresses the issue of human resource development or, more properly, the subset of human capital investments that are directed toward labor market outcomes. This covers a range of programs designed to improve the quality of labor supply in Sri Lanka--education, training, vocational education, apprenticeship, work experience, etc.

The scope of work governing this activity mentions a number of specific task requirements:

- the preparation of an inventory of vocational education and skills training programs operating in Sri Lanka;
- the development of a procedure for assessing the cost-effectiveness of training programs;
- an assessment of private-sector, on-the-job skill development activities;
- a review of factors affecting the provision of skills development in Sri Lanka, such as labor regulations; and
- an assessment of the apparent cost-effectiveness of different modes of delivery for skills development (e.g., apprenticeship, on-the-job, institutional training, etc).

Most assessments of skills development efforts in industrializing countries have criticized public-sector, institutional approaches on a number of grounds: lack of linkages with employers, irrelevant curricula, a bias in favor of theory over practice, low quality of question then logically follows: How can the private sector be induced to generate more socially productive skills development? That is, can the system be privatized? If someone wanted to rely, in so far as is economically feasible, on private-sector-generated skills development, what obstacles would he/she face and what gaps would likely remain after the obstacles were minimized?

In pursuing this line of inquiry, we are guided by the principle that the mere identification of consumption or investment deficiencies (from a social perspective) is not sufficient justification for believing that those deficiencies must be corrected by public provision. Stated another way, the desire to insure the availability and consumption of meritorious goods does not necessarily imply that those goods must be produced by the public sector. A distinction must be maintained between collectivity in production and collectivity in consumption. An alternative approach to public provision of meritorious goods is to identify the reasons why markets are not generating the desired outcomes and to change incentives or disincentives to better reflect social objectives or assessments of social costs and benefits.

This said, it must be noted that no country in the world relies solely on the private sector to provide skills development, and there are sound reasons for this. Skills are an input to the growth process and to a certain degree must anticipate that process. In the nascent stages of development, the private sector lacks resources and organization to effect the desired level of human capital investment. Generally speaking, it is too small to be able to realize the interdependencies in productivity that can result when a sufficient scale of human capital investments is reached. Thus what we are looking at here is not a simple dichotomous choice but rather, strategies for creating an effective partnership among the various social agents--Government, NGOs, employers, workers, etc. This requires, first, an assessment of the current level of skills development in the country; second, an identification of gaps in that level or in its composition; and, third, a further identification of the reasons for those gaps and points of leverage for their closure.

ORGANIZATION OF THE REPORT

The remainder of this report is organized into six sections. The next section of this report sets out a policy framework for our assessment. This is necessary not only for intellectual consistency, but also to stress the often overlooked verity that skills development is a particular tool, suitable for particular problems. There is a temptation to overload skill development systems with objectives that they are not suited to achieve, resulting in resource wastage and, worse yet, politically volatile frustration among participants. Labor preparation is not the same as labor utilization and a lack of jobs is not the same as a lack of access to existing jobs. While we have attempted to avoid protracted discussion of abstract economic theory--as our objectives are limited and specific--some general issues are aired in an effort to identify likely constraints on human resource development in Sri Lanka and on future policy options.

Section III presents the results of our efforts to construct an inventory of information on skills generation in Sri Lanka. That those results are less than our initial aspirations--particularly regarding private-sector skills development--is not only a source of disappointment but also a telling indicator of the state of human resource development policy in the country. There are a great many programs in operation, but these are generally underfunded and fragmented. There is certainly no such thing as a "system" of skills development, which would induce private employers to switch to higher-skilled production processes. Although coordinating bodies exist, the disparate activities are in no way coordinated. Nor does the set of programs appear to be guided by broader macroeconomic objectives.

Section IV provides an assessment of the inventoried programs from the perspective of the internal efficiency of operations. This covers such questions as adequacy of facilities, instructors, materials, and equipment, as well as outreach activities to students or employers. The source of this information is secondary data from two previous studies, discussions with Government officials, and a limited number of site visitations. Data on costs from the previous section are analyzed, in so far as is feasible, but because the data were collected for administrative, rather than analytical purposes they are not entirely suitable for the objectives of this report.

Section V attempts to address the question of the external effectiveness of programs, i.e., it provides an assessment from the perspective of employers and labor market outcomes. That assessment is based on the results of a previous tracer study of program completors, as well as a survey of 50 employers in and around Colombo and the Free Trade Zone in Katunayake. The latter survey, carried out by this mission, can hardly be called scientific in terms of statistical reliability, yet results are instructive. Those results, taken in combination with discussions with public officials, employer associations, unions, and representatives of non-governmental organizations, yield a fairly consistent, if somewhat pessimistic, set of conclusions. Employers in Sri Lanka have been so beset by the effects of internal ethnic and political strife--and most recently the Gulf conflict--that skills development is one of the least of their current concerns. They are worried more about immediate survival than about future growth prospects. Investments are depressed and have been so for some time. This is true for investments in the physical stock and in human capital as well. It will take a major effort to leverage resources from the private sector in partnership with the Government to expand the skills base or productivity of the labor force. Also, a number of prior conditions will have to be satisfied before that leveraging can begin.

Section VI presents conclusions as well as a few options for consideration by USAID and the Government. In discussing these options we are mindful of the fact that resources are extremely limited and that the best that can likely be hoped for, given the immediate outlook, is the creation of an environment that will be favorable to the resumption of normalcy and, later, growth.

Supporting appendices are presented at the end of Section VI. We would draw particular attention to Appendix A, which presents our efforts to outline a procedure for assessing the cost-effectiveness of ongoing training programs, since this is a specific task requirement within our scope of work. We note that lack of data--particularly on wage profiles for completors of training--has precluded the successful execution of this task. We offer a set of suggestions concerning improvements in the data base, but we further note that cost-benefit techniques are not entirely relevant in the Sri Lankan case. Partial equilibrium analysis, such as cost-benefit calculations, is not useful in measuring the broad macroeconomic effects of skills development on the relaxation of constraints on growth. For this, a general equilibrium framework is required, and partial program effects are nearly impossible to measure within such a framework.

II. THE POLICY FRAMEWORK

SRI LANKA'S DEVELOPMENT POLICY

From the current vantage point, it is possible to identify two separate strands within the country's development strategy: a growth component and an equity (poverty alleviation) component. The first relates to policies and programs aimed at raising the potential growth rate of the economy through investments in infrastructure, agriculture, tourism, industry, services, and human capital, in an effort to stimulate development through the expansion of exports or import substitutes. Policies to reduce, simplify, or rationalize regulations, to attract foreign investments, or to privatize government industries are also part of this growth component of the general strategy.

The second component includes programs aimed at "those left behind": the un- or underemployed, or those unable to work, whose needs are felt to be too pressing to await the trickle-down benefits of sustained economic growth (which itself may take some time to achieve). The capacity for public investments in the growth process is extremely constrained, and political imperatives require that distributional objectives not be ignored as that process takes shape. The "Janasaviya" program, which provides investment capital for the poor along with in-kind and cash transfers, is one example of this targeted, poverty-alleviation, strategy. Others include food stamps, the free mid-day meal, and policy to give preference to the unemployed in Government hiring.[1]

Over the long term, the dual objectives of growth and poverty alleviation are largely compatible and, to a significant degree, complementary. In the short run they are somewhat competitive, in that funds spent as transfers to the unemployed or impoverished are not available for such growth-enhancing investments as, say, the development of the infrastructure. Moreover, transfers may be financed in ways that particularly discourage investments and growth.

SKILLS DEVELOPMENT

Given the dual objectives of minimizing constraints on economic growth while at the same time accomodating the needs of those currently at the margin of economic progress, the question then becomes, where does the class of tools known as skill development fit in? Or, perhaps more importantly, where does it not fit?

Many policymakers--not just in Sri Lanka, but all over the world--mistakenly look at skills development as a short-cut to alleviating unemployment, which it is not. Skills development--training, apprenticeship, and vocational education--does not create jobs; it only allows them

[1] The wisdom of such policies is a matter of some debate in that programs that favor the unemployed provide incentives to become or declare one's self as unemployed (Dickens and Lang, 1989). Having been discussed elsewhere (Kannapoan and Nelson, 1989), however, this issue is not addressed further in the report.

to be filled. Unless there is excess demand for labor at prevailing wage rates, or downwardly flexible wages, skills development programs run the risk of raising expectations beyond the capacity of the labor market to provide jobs for program completors. Within labor-surplus economies, such as Sri Lanka, reductions in unemployment generally require the expansion of jobs through growth or special employment creation projects. There are few feasible shortcuts.

In the short term, the appropriate objective of skills development is to reduce the number of unfilled job vacancies (if they exist), to increase the productivity of the work force, or to prepare the way for future absorption of capital or technology. All three goals imply, and are in fact driven by, the objective of increasing output and incomes. For the longer term, skills development can be useful in reducing constraints perceived to be limiting economic development--such as a lack of skills, which is perceived to be an impediment to the introduction of improved capital and technology. Here the idea is to raise the relative productivity of labor vis-a-vis capital, and to encourage employers to utilize labor-complementary capital. This would permit economic growth paths to be more labor-absorptive than in the absence of skills development.

Here again though, it must be stressed that the effectiveness of such a strategy depends crucially on the condition of sustained growth. Many countries--Sri Lanka included--have wasted significant sums of money on training facilities built in anticipation of economic growth that later failed to materialize.[2] This suggests that policies for skills preparation should be kept in balance with plans and policies for skills utilization.

Regarding the equity component of the strategy, skills development can be useful in preparing transfer recipients for their eventual transformation into productive agents of growth once development has advanced beyond a point of sustained take-off, and in minimizing transfer costs during the waiting period before that point is reached. In this case, skills development is used to increase the effectiveness of transfers, thereby reducing the requisite level of funds necessary to achieve targets of poverty alleviation. This is the rationale behind the notion of self-employment or small business schemes for the poor. The hope is that once such businesses become self-sustaining, further transfer requirements will be reduced and other families in the poverty queue can be assisted. It is with this component where non-governmental organizations can be most useful, by increasing the productivity of transfers.

Although the broad question of poverty alleviation clearly extends beyond the specific issue of skills development, we would offer three observations on this point, in passing. First, the kinds of skills necessary for self employment and small industry development are quite different from those normally considered under vocational training. Second, the kinds of activities usually pursued under these sorts of schemes are themselves more likely to be redistributive than productive in nature, from the social perspective. The purchase of rickshaws or bajajs does not, in itself, increase passenger miles travelled and so may merely enrich a few fortunate recipients at the expense of previous transport operators. Third, such schemes generally involve at least marginal expenditures on capital or supplies. When they

[2] The converse is occasionally true as well. Capital flows from Hong Kong after the Tianamen Square incident went to Malaysia and Thailand, not to Sri Lanka. What role technical skills played in that diversion is anyone's guess, but it was certainly not a positive feature for Sri Lanka.

fail--say, as a result of an economic downturn--what is lost is more than consumption rights, but assets as well. In any event, loans to the poor can only be as effective as the uses to which they are put and thus there is no guarantee that such programs will be any more cost efficient than simple cash transfers. The experience of the Grammeen Bank in Bangladesh is encouraging in this regard, but early setbacks in that experience are instructive as well.

THE CURRENT LABOR MARKET SITUATION

A fair amount has been written about the dimensions and causes of unemployment in Sri Lanka (Kannappan and Nelson 1989, Dickens and Lang 1989). The discussion has been largely inconclusive--partly due to inappropriate data and partly due to the complexity of labor market problems resulting from prolonged economic stagnation.

The essential question is whether unemployment is due to a general deficiency in demand for labor or to a mismatch between the skill requirements of employers and the characteristics of the unemployed (coupled with wage rigidities). A consensus appears to be emerging that a little bit of each is involved, i.e., both a general shortage of jobs and a tendency for first-job seekers to prolong their unemployment in the hopes of landing a position in the public service or in the "up-market" component of private industry[3]. The fact that Government hiring favors the unemployed explains why there are incentives to wait in unemployment (or to declare one's self as unemployed to survey takers), rather than accepting alternative available wage offers.

A central problem in attempting to assess the competing hypotheses is that the only data available refer to unemployment rates across various demographic groups (age, sex, education) or sectors (rural/urban, agriculture/industry, public/private). To have skills mismatch between supply and demand, high unemployment within particular groups would have to be coupled with unfilled job vacancies in particular sectors or for particular occupations. A simple concentration of unemployment among particular groups does not necessarily mean that unemployment is structural in nature. It could simply reflect employer preferences in hiring (the queue theory of unemployment). If jobs are generally scarce, they have to be allocated in some way and this could result in unemployment concentrations among particular demographic groups. Of course, such concentrations are not without intrinsic interest, but they may call for different remedies than would be the case were the problem one of skills imbalances.

This appears to be the case with the variant of the mismatch hypothesis felt to be applicable in Sri Lanka. To the extent that more highly educated people (0-levels and above) are waiting for public-sector jobs, or for high-wage jobs in the private sector, it is largely an attitudinal problem (or a wage policy problem) for which skill development programs are ill-suited. Skills training is a very difficult approach to the dampening of gambling instincts, and the

[3] This mission does not necessarily associate itself with the growing consensus, which is based not on direct interview data but on inferences drawn from duration of unemployment data. We note that the "waiting hypothesis" is only applicable to a minority of unemployed youth--those with O-levels or above--and we feel that more direct interview data on aspiration and reservation wages are required to permit a rigorous test of this hypothesis.

payoff to this waiting lottery can be high and life-long. Moreover, to the extent that these young people can afford to wait for the "right job," there is a question as to whether they should be given priority in terms of policy interventions. This is not to say that idleness is to be encouraged or its social costs ignored (Presidential Commission on Youth 1990), but rather to note that different policy interventions come at different costs and Sri Lanka is not in a position to ignore those costs. Skills development is costly and so should be reserved for cases where its impact on productivity is expected to be high and where less costly alternatives are not available or appropriate.

The simple length of economic malaise in Sri Lanka has been sufficient to cause underlying structural problems to emerge. Put another way, accomodations to prolonged demand deficiency give rise to structural impediments to the eventual resumption of economic growth. Growth rates have been low in Sri Lanka for nearly 10 years (i.e., even before the onset of civil disturbances in 1983). This has dampened expectations, led to an erosion of investment, caused capital flight, and, most important for this report, resulted in an outflow of human capital. The mere cessation of violence and resumption of tourism will not cause things to right themselves in a short time. The capital stock, never up to date in the first place, has seriously depreciated. Employers have accomodated that depreciation by shifting to low-skilled labor-intensive production functions--overstaffing and undertraining. In this sense, expectations have adapted to realities ("adaptive expectations").

Job vacancies, relative to job seekers, are few but there are pockets of skill shortage. In a labor surplus environment, management skills are always in short supply[4] and the "skill drain" has sharply intensified the problem. Labor is a constraint on the accumulation of capital and technology, but it is but one of many. Moreover, while we have been able to identify specific skill shortages in certain technical fields (auto mechanics and machine repair, for example), these pale in significance relative to the general problem of low average productivity of the work force. Skill shortages exist, somewhat, but they will only really emerge as (and if) the economy begins to grow. Presently, the main problem is low general productivity. Jobs get done, eventually, but not well. This is a serious constraint on Sri Lanka's international competitiveness. While wages are generally low, unit labor costs are not, due to absenteeism, low motivation, and reduced productivity. This suggests that skill upgrading for the employed should be given priority over training for first-job entry, at least under current resource constraints.

OUTLOOK

The immediate outlook is not bright. In addition to the 100,000 workers who are being repatriated from Kuwait, some of whom will have to be accomodated with an already inadequate infrastructure, and to a curtailment of exports due to the embargo of Iraq, Sri Lanka must face rising competition from other developing nations (Indonesia, Malaysia, and even Caribbean countries), many of which have already gained a foothold in such export markets as garments or electronic products. Export promotion alone will take a long time to

[4] In Sri Lanka, many employers have already adapted to the lack of management skills by introducing inefficient management structures.

yield the desired effects of significantly reducing unemployment. Indeed, export promotion itself requires a multiplicity of activities to relax the many interlocking constraints which now limit it. Massive investments are required in the infrastructure, and while the Government is according priority to this activity (allocating 43% of the investment budget to improvements in the economic infrastructure), limited funds insure this will be a slow process.

According to the Ministry of Policy Planning and Implementation, the 1989 unemployment rate was about 18%. In the next 5 years, the labor force is expected to grow at an average annual rate of 1.9%. The current 5-year plan calls for a target GOP growth rate of 5.2%. If the economy were to grow at 5.0% annually with factor productivity unchanged, the expected unemployment rate in 1995 would be 11%.[5] However, the target growth rate was established before the Gulf crisis, and will most certainly not be achieved. If, as a result of the likely loss of export earnings and remittances, the economy is able to achieve only a 3% annual rate of growth, then the unemployment rate can be expected to rise to 22% by 1995. We observe that any aggregate unemployment rate in excess of say, 10% is likely to severely hinder the effectiveness of training programs, implying very low placement rates (Bowles 1988). Moreover, because of seniority systems and severance regulations, it is very hard to replace experienced workers with even well-trained first-job seekers.

THE POLICY ENVIRONMENT

From the current vantage point, the best the Government can likely hope for is to begin creating an environment that is favorable to future growth prospects, in contrast to what currently can only be called a negative environment.[6] Some of the necessary steps, such as deregulation and de-bureaucratization, need not add to the public deficit. Others, such as investments in infrastructure, definitely would and thus are likely to be pursued only on a limited or experimental basis. Clearly, efforts will be made to pursue complementary policies where feasible--job creation programs, for example, can be used to improve the infrastructure. It is likely that specific program features are less important than how those features are combined to create an environment conducive to the absorption of capital and technology, and to improved productivity.

The private sector has a lead role to play in the development and implementation of human resource development policy. This is so not only because the Government does not have the resources to implement that policy on its own, but also because it is the private sector that will ultimately have to use those human resources productively within the growth process. Very few employers are currently involved in systematic skills development for the work force, and there are sound reasons for this. A number of interlocking and self-reinforcing factors now constrain employer willingness to invest in human capital: lack of investable funds, lack of scale and access to markets, fears that human capital investments will be lost through

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[5] Estimates provided by Minsitry of Policy Planning and Implementation.

[6] While de-regulation is occurring, the process has a long way to go. It is rumored that the corporate income tax rate is scheduled to rise from 40% to 64%. Whether true or not, such rumors undermine business confidence. Price controls are still imposed on certain items, and the tarriff structure is occassionally biased against import-substitution efforts. (See Section V).

migration, lack of facilities for training within firms, inefficient compensation (wage) structures, and an absence of incentives in favor of skills development.[7] In many cases, there is simply an underappreciation of the potential benefits of training, as employers have already adapted to low-productivity production processes.[8] Section VI includes a number of options for addressing these factors, but we must recognize that we are dealing, essentially, with a "catch-22" situation: increased growth requires increased productivity, yet productivity improvement will only be economically viable in a climate of optimism about growth prospects. This clearly implies that policymakers will have to step forward and demonstrate a willingness to turn things around.

A few "success stories" could go a long way toward demonstrating this willingness, and, in fact, given resource constraints, that may be the most that can be accomplished in the short term.[9] Government can also, however, level the playing field for private investors, many of whom now confront an array of bureaucratic controls and delays. Improvements in the investment environment do not seem to be beyond the resource capabilities of the public sector, but it is only when such improvements have been made that it will be possible to talk seriously about a private-sector-oriented skills development strategy for Sri Lanka.

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[7] Another factor is that certain employers appear to be rent seekers rather than profit makers. They accumulate assets, but not business. Tax laws sometimes permit and sometimes encourage this behavior.

[8] A recent survey of 60 exporters undertaken with USAID funding indicated that most respondents (two-thirds of those sampled) felt they were using up-to-date appropriate technology. (Sri Lanka Business Development Centre 1989). Independent verification by outside experts came to just the opposite conclusion.

[9] For example, export promotion requires the identification of market niches where Sri Lanka could compete. Beyond this, constraints on accessing those opportunities must be relaxed. A number of inputs for packaging (glass, printed tin) are currently under monopolistic control and this, in turn, increases the risk of not being able to fill orders in timely fashion.

III. INVENTORY OF VOCATIONAL EDUCATIONAL AND TECHNICAL SKILLS TRAINING PROGRAMS IN SRI LANKA

OVERVIEW OF VOCATIONAL/TECHNICAL EDUCATION SYSTEM

Over 20 ministries and government agencies currently provide technical and vocational education for various target groups in Sri Lanka. In addition, it has been estimated that over 3,000 institutions, agencies, and organizations provide some type of vocational or technical training in the country. Estimates of the total training capacity range from 35,000 to 200,000 persons per year, with programs lasting between 6 and 48 months. Although most of the technical training is carried out by government agencies, or with support from donor agencies to various governmental institutions, there is some private-sector involvement, but the exact level is not known. It has been estimated that private institutions provide between 10 and 33% of the industrial training courses, and most appear to be profitable (ADB 1989). Their contribution to informal skills development through on-the-job training is not recorded, but is probably the largest source of skills acquisition in the country. Non-governmental organizations usually target the poor or unemployed, but programs tend to be small and underfunded.

The governmental institutions providing vocational and technical training education programs and courses were found to be numerous and exceedingly diverse. Different data sources provide conflicting information. Appendix C shows the major ministries' involvement in technical and vocational education/training. Technical courses range from short courses of a few months to 4-year degree courses. Some courses are well-organized with a balanced theoretical practical curriculum, while others are informal and nonstructured. No effective coordination mechanism exists to oversee or monitor the technical training system so courses are not consistent across delivery systems or over time. The same facilities are used by various ministries to carry out their courses, which sometimes causes misunderstanding as to who is running which program. Program size ranges from a few students to thousands, depending on the institution.

Vocational and technical training courses are offered over a spectrum of occupational groupings as indicated below (ADB 1989):

1. Professional, technical, and related	335
2. Clerical and related	231
3. Sales work	15
4. Service Work	211
5. Agricultural, animal husbandry, forestry, fisheries	81
6. Production	2,419
7. Other	51
Total	3,343

Governmental agencies conduct about two thirds of these courses (2,213), while the private sector sponsors the remainder (1,130). Within the public sector, the Ministry of Education and Higher Education conducts the majority of courses (33%) while other governmental agencies conduct a fewer number (15% by the National Apprenticeship Board, 11% by the Small Industries Department, 10% by the Labour Department and the remainder by others). (ADB 1989).[10]

Vocational education and technical training activities are spread over a large number of courses, distributed across several occupational groupings, and are delivered by numerous public and private institutions with limited standardization, monitoring, and coordination. It was difficult to determine the total extent of training provided by the various institutions and agencies and to assess where gaps existed in the skill spectrum.

THE PRIVATE SECTOR

Although the majority of the formalized technical and vocational educational programs are controlled and conducted by governmental ministries, a number of private agencies and NGOs offer technical training courses that vary from formal to informal. They are primarily viewed as contributing heavily in two main areas: commercial education, and selected craft-level occupations. Proprietary schools (outside of private industry) have not ventured into programs that require heavy capital investment in infrastructure and facilities. An estimated 25 percent of the training institutions belong to the private sector, within three main categories (Ministry of Plan Implementation, 1987):

1. Industrial establishments;
2. Fee-levying training institutions; and
3. Voluntary organizations.

Industries provide limited pre-service, in-service, and up-grading opportunities for their employees for lateral and vertical mobility to meet the internal demands of the private sector. On-the-job training provides the most important impact made by industry. In-house industrial training is prevalent in apprenticeships and in some technical training progams (see below). Although the level of industrial involvement in technical training progams is perceived to be minimal, it provides a significant opportunity to expand targeted human resource development efforts. One example is a model in-plant training program, funded by the Government of Germany as assistance to the Mercantile Seaman Training Institute.

Fee-levying training institutions typically focus on the high end of the technological spectrum. Training in computers, electronics, and repair of high-tech equipment are all popular courses offered by proprietary institutions. Private colleges tend to run courses in areas such as accounting, computer programming, systems analysis and design, typewriting, and shorthand. However, fees limit student participation, especially those from poor backgrounds. Also, without standardized curricula, the burden of determining quality programs is placed on

[10]The Labour Department's share of the total appears to have increased somewhat since the time of the ADB survey.

participants. Nevertheless, proprietary organizations provide an important source of skilled technical workers.

Non-governmental organizations (NGOs) financed by voluntary contributions, donor funds, and philanthropic organizations have traditionally supported craft-level training in a number of occupations. Many programs are targeted at a subsection of the population usually outside of mainstream education, e.g., the poor, women, the unemployed, school leavers/dropouts, and, most recently, returnees from the Middle East. The courses cover topics that can improve basic living standards (home gardening, food preservation, etc.) or provide skills for small home-based businesses (handicrafts, cake baking, making chopsticks, carpentry, welding, English language, etc.).

As one example, the Sarvodaya Sharamadana Movement (SSM) plays an important role in providing vocational training in a number of fields, principally in handicrafts and home gardening. This nonformal program is funded by a number of private organizations. It is targeted mainly on rural participants. Another program, Agromart (funded in part by USAID), teaches rural women to upgrade basic skills and to establish small business enterprises.

Nonprofit organizations, such as private technical training institutes funded through religious organizations, provide training in trades and crafts. For example, Diyagala Boy's Town provides orphans and poor boys with training in agriculture, industrial technology, and various trades. Underlying the formal training are the goals of shaping characters and instilling appropriate attitudes and work ethics.

THE PUBLIC SECTOR

The complexity of the set of public-sector training activities is compounded by the fact that some 20 ministries have set up their own training progams and delivery systems. Coordination mechanisms, established to standardize curricula and monitor programs, are respected by some ministerial bodies and ignored by others.

The Ministry of Education and Higher Education

The Ministry of Education and Higher Education carries out over one third of the government-funded technical education programs. Appendix D provides an overview of this system from secondary level through higher education. The technical/vocational educational training progams in the country can be classified within four groups:

a. professional engineering education at degree and post-graduate levels;

b. technical education for technicians;

c. technical/vocational education at the craft level; and

d. vocational education and training courses, mostly short courses for a wide range of skill levels.

Two universities (Peradeniya and Moatuwa) offer degree courses in engineering and technology. Students must have passed A-level exams to quality for entrance into the university. Approximately 4,000 students completed their degrees in 1986 (ADB 1989).

Central to the technical training system are the 24 Technical Colleges (13 Grade I (diploma and above) and 11 Grade II (craft level and business)) plus the 6 Alliliated Technical Units. See Appendix E for a complete list of these schools.

Five levels of courses are offered by the Technical Colleges:

- HND - Higher National Diploma; (equivalent to a degree)
- ND - National Diploma;
- NC - National Certificate;
- NCC - National Craft Certificate; and
- SC - Short Course.

The Technical Colleges offer 2-year courses at the diploma and certificate levels. Some of the more important courses are listed below:

- Higher National Diploma in Engineering;
- Higher National Diploma in Business Studies (Accountancy and Commerce);
- National Diploma in Agriculture;
- National Diploma in Business Studies;
- National Diploma in Home Economics;
- National Diploma in Jewelry Design and Manufacture;
- Higher National Certificate in Engineering;
- National Certificate in Technology; and
- National Certificate in Business Studies.

In 1989, approximately 53 different courses were offered through the Technical College system. In addition, 21 short courses are also offered. A list of courses, which range from an engineering diploma to dressmaking, can be found in Appendix F.

Not all Technical Colleges offer all programs. Most Grade I Technical Colleges provide a two-year National Diploma in Business Studies. After the completion of the two-year institutional training, in-plant training for 6 months is provided. Three Technical Colleges (Maradana, Galle, and Badulla) offer National Certificate courses in Business Studies where specialization is available in several disciplines. Students are also provided 6 months of training in industry upon completion of the 2-year institutional training. Because the in-plant experience is considered part of training, students do not receive allowances or stipends (ADB, 1989).

The Technical Colleges also offer courses at certificate and craft levels either part-time or full-time. A recent addition are the Short Courses (SC), which range from 3 to 12 months and concentrate on training for operative skills and the acquisition of practial knowledge in

fields where it would be possible to obtain self employment. Emphasis has been given to agriculture, agro-based products, and industry. Also, a series of computer awareness programs are being conducted at the Technical College in Dehiwela where there is a UNDP-funded computer laboratory. It appears that the Technical Colleges are in a good position to offer courses to meet the needs and demands of its student population. In 1987/88 over 14,000 students were enrolled in the Technical Colleges (ADB 1989).

The Open University, established in 1980, also offers a Certificate in Entrepreneurship and a Diploma in Technology in six program areas: communications; electrical electronics; civil, mechanical, and electrical engineering; and textiles. The Open University was designed to enable students over 18 years of age to pursue courses leading to a first or post-graduate degree (diploma or certificate), on a nonresidential basis.

Four other activities under the Ministry of Education and Higher Education are worth noting. First, the National Technical Teacher Training College (NTTTC) established in 1983 to train teachers for the Technical Colleges provides an important mechanism for improving technical education. NTTTC has several objectives: to prepare and revise curricula; to provide in-service training to teachers; to conduct courses for other organizations; to maintain equipment and machinery; and to provide a media and resource center.

Second, the Technical Educational Project is a major five-year effort (from 1988 to 1993) financed in part by a $36 million loan from The Asian Development Bank (ADB). This project has three goals: improvement of the efficiency and effectiveness of the Technical Educational Division and the Tecnical College; rehabilitation and upgrading of facilities at Technical Colleges, and the provision of incremental recurrent budgetary support for the project. This project is well underway and continues to support activities to upgrade the technical educational system in the Ministry.

Third, the Ministry of Education and Higher Education also offers short courses to other agencies. Six-month courses are made available to National Apprenticeship Board trainees in four selected trades. Similarly, a 10-week training course is offered for trainees in the Institute for Construction Training and Development (ICTAD) under the Ministry of Local Government and Housing. Qualifications vary according to the level of course and sometimes the field selected.

Fourth, the Ministry of Education and Higher Education has formal and nonformal elements of national education both within the secondary school curriculum and for school dropouts. These include:

a) Technical Studies - 13 technical subjects are offered in grades 6 through 10, with '0' level examinations. Only agriculture and home economics are offered at the "A" level exams. In many schools, only one or two subjects are offered, and in some schools, no subjects are offered. The White Paper on Education (1981) suggested that technical courses be replaced by "life skills" in grades 6-9, with packages of technical options to be offered in grades 9-11. Information available to the assessment team indicated that the "life skills" courses have been introduced as a pilot project in some schools. The technical packages are being designed.

b) Nonformal Vocational Education - The Technical Educational Units hold basic technical vocational short courses using workshops and other facilities available in the school system, after school and on weekends. One of the main purposes has been to train rural people to utilize local resources and develop self-employment activities.

Ministry of Youth Affairs and Sports

The Ministry of Youth Affairs and Sports offers training through two primary agencies: the National Youth Services Council (NYSC) and the National Apprenticeship Industrial Training Authority (NAITA). The NYSC offers vocational training programs at different levels from 6-24 months to produce qualified skilled workers.

NAITA has three major objectives:

a) to formulate, implement, and supervise a scheme of training to cover each category of apprentice;

b) to establish apprenticeship standards in relation to such training and determine the period of training for each category of apprentices, and as well as the number, nature, and content of training to be undergone by each category; and

c) to determine the trade tests to be undergone by each category of apprentice, to grade results, and to issue certificates to those who quality.

Under the apprenticeship program, a student is trained on-the-job for a specified period of time. Under Act 80 (1990) only needy students are paid an apprenticeship allowance by the Apprenticeship Board. About 20% of the apprenticeships are filled by women. Training in the workplace is supplemented by institutional training as per course requirement. Although this on-the-job experience is viewed by some educators as an excellent way to apply institutional theory to a practical situation, it is viewed by others as cheap labor supply to which the industry has no commitment.

The NAITA has developed about 225 training modules based on the International Labor Organization (ILO) modules of Employable Skills. Not all modules are offered at one time, as student/parent demands dictate course offerings. NAITA also offers a large number of situational training progams for persons undergoing training for a specific job in a given industry with the understanding that the employer will employ the apprentice after the completion of training. The success of the apprenticeship program relies on the involvement of private industry. In 1988, it was estimated that 2,325 industrial establishments participated in the program (ADB 1989). Thus, the NAITA is viewed as being fairly successful in mobilizing industrial participation.

NAITA offers programs at both the Technician Training Institute (TTI) at Katunayake and at the Apprenticeship Training Institute (ATI) at Moratuwa. The TTI program, supported by ILO/UNDP, is a 4-year special apprenticeship technician-level course that consists of 3 years

of industrial training and an aggregate of 1 year institutional instruction at TTI. Supervisory training courses are also offered by TTI. The intake in 1988 was 243.

The Apprenticeship Training Institute (ATI) is a model program begun in 1983 and funded in part by the Government of Germany under the NAITA (See Appendix G). Here the "Dual Training System" has been used as the basis for curriculum development and is being suggested as the model for all vocational/technical training. The ATI offers a 3-year craft-level training program comprising 12 months of basic training, 4 months of advanced training at the institute, and 20 months at an industrial establishment. Intake at ATI in 1988 was 116.

The number of establishments conducting apprenticeship training has increased steadily from 1,340 in 1982 to 2,325 in 1987, with about a 20% increase per year over the last three years (See Appendix H). During the last year reported (1987) the number of institutions consisted of the following:

1,302	Craft Apprenticeship Categorized Trade Programme and Craft Apprenticeship Situational Normal Progamme
94	Technical Apprenticeship
45	Special Apprenticeship Progamme and Special Situational Apprenticeship Programme
619	Village Level Apprenticeship
198	Engineering Undergraduate Apprenticeship
67	Construction Industry Trades Apprenticeship, Construction-Supervisory, and School Leavers
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2,325	Total Establishments Conducting Apprenticeship Training

The NAITA has certified almost 27,000 trainees from 1982 to 1986. About 63% successfully passed their examinations in 1986. (See Appendix I for full details of "Intake and Output Trends for NAB Training Programmes".) Information obtained from NAITA indicated that job placement rates for those that completed training was up to 99%, but this could not be verified.

Ministry of Labor and Vocational Education

The Ministry of Labor and Vocational Education (MOLVE) operates a large number of vocational education and training programs through its Skills Development Centers and Mobile Centers. The Skills Development Centers have been established in nine districts with aid from the ILO and UNDP. Additional facilities will be developed in 15 centers under the Matara and Matale District Integrated Rural Development Program. The Mobile Centers hold training in rented workshops and can accommodate about 6,500 youth per year in basic skills training. The courses vary from 6 months to 1 year. It has been estimated that a total of 10,000 were trained by the MOLVE in 1988 (See Appendix J for a list of offerings from 1977 to 1985.)

The MOLVE also operates the Foreman Training Institute (FTI), which was established in 1985 with assistance from SID for both skills training and supervisory studies. A 6-month

diploma course combines classes in eight areas: auto mechanics, machine shop, welding, building construction, sheet metal work, fitting, electrical installation and repair, and electronics. The FTI also offers short courses to upgrade vocational skills of supervisory personnel (foremen).

Other Programs

Other ministries operate smaller programs, which are described briefly below:

- *The Ministry of Transport Board*: Offers vocational training to meet its own demand for skilled workers. These programs are conducted principally by the Ceylon-German Technical Training Institute in collaboration with NAITA.

- *The Ministry of Industries, Science and Technology (MIST)*: Provides short courses to train and upgrade managers at the National Institute of Business Management. A new mandate (1989) provides for the restructuring of the MIST and calls for the creation of several boards and advisory councils to upgrade industrial technology for the purpose of stimulating economic growth.

- *The Ministry of Local Government, Housing, and Construction*: Offers vocational education programs primarily in trades related to construction work and irrigation through the Institute for Construction Training and Development (ICTAD). The training is done partly in the Technical Colleges and partly on-the-job. In 1987 approximately 11,462 students were trained by the ICTAD (See Appendix K). ICTAD's program is financed in part by the Government of Sri Lanka, SIDA and UNDP.

- *The National Trade-Testing Program*: Tested 8,650 students in accordance with national skills standards, but only 3,600 passed. National skill standards have been formulated for masons, carpenters, electrical wiremen, plumbers, bar-benders, equipment mechanics, and heavy construction equipment operators. They were formulated by an inter-ministerial committee including representatives from industry.

- *The Ministry of Rural Industrial Development*: Offers training through the Department of Small Industries through a series of village-based centers located throughout the nation. Students are school leavers or drop outs who come for craft-level training and small-business skills. In one center in Colombo the institute recruited 50 students for the current year, but only 25 (including 6 girls) came because of a lack of money to live in the city. The center's total capacity is 150. Instructors are recruited from the best of the students. Most students (60%) cannot find jobs but are assisted in obtaining loans to start their own small businesses. The Department of Small Industries also provides training at the Artline Textile Centers for the garment industry. An estimated 12,500 workers are trained at these centers. (Commission on Youth 1990).

Other ministries (i.e., Agriculture, Fisheries, Social Services, Health, Textile Industries, Cooperatives, Land and Land Development, Posts and Telecommunications, Women's Affairs and Teaching Hospitals, etc.) provide vocational training at a projected rate of 12,760 persons per year. These ministries operate vocational training programs primarily to train for in-

house employment (ADB 1989). Although some programs are relatively small, the Ministry of Textile Industries has two rather extensive training institutes responsible for base, middle, and supervisory-level manpower for staffing the textile industry. The Ministry of Trade & Shipping also trains large numbers of potential employees for the shipping industry.

Sri Lanka has one Trade Union that has established a training facility. The Ceylon Workers Congress (CWC) established a vocational training center at Kotagala and provides training to plantation workers in courses such as carpentry, sewing, electrical, and machine repair.

INTAKE CAPABILITIES

The diversity of vocational training programs conducted by a large number of ministries, agencies, and organizations makes it difficult to assess the rate of capacity utilization in the field of vocational education with sufficient accuracy. This is particularly true with these short courses because these are offered only on demand and not every year. The ADB has estimated that the total number of students trained in vocational/technical education over the past 6 to 8 years has remained constant or increased slightly (ADB 1989).

Current capacity for student intake is limited by facilities, teachers, and operating resources. A 1987 estimate from the Ministry of Education indicated an intake capacity of 98,087 and another 28,415 for technical education.

Although a breakdown of intake capabilities by ministry would be instructive, it was impossible to find data at this level of detail. The Ministry of Education and Higher Education maintains the most detailed data base. Appendix L lists student admissions to Technical Colleges by course. Both full- and part-time students are listed. Of the 33,502 students that applied in 1987/88 only 22,972 (68.6%) were interviewed; 15,867 (47.4%) were selected and 14,015 (41.8%) registered. It is interesting to note that the five most sought-after courses took only a small percentage of applicants (32% for part time and 18% for full time) as shown below:

Student Admission to Technical Colleges
by the Most Frequently Applied for Courses in 1987/88

Course	Applied	Registered	Rate
Part Time			
Business studies	2,199	599	27%
Civil Eng. Tech.	1,809	678	38%
Accountancy	1,802	595	33%
Elect. and Elect. Eng.	1,108	367	33%
Mech. Eng. Tech.	911	298	33%
Total	7,829	2,537	32%

Full Time

Draughtsman Appren.	6,096	783	13%
Stenography	5,647	1,168	21%
English Com.+Indus.	1,557	486	31%
Agriculture	947	66	7%
Auto. Mech.	814	177	22%
Total	15,061	2,680	18%

COSTS

The costs of vocational/technical training programs were not readily available from institute administrators. The fact that costs were not addressed in other studies or reports indicates the difficulty of obtaining reliable information. Information from site visits yielded estimates ranging from $142 (Sri Lanka Technical College) to $12,500/student/year (Technical Training Institute). The wide range might be seen as indicative of the diversity of programs, but it also speaks to the quality of information (or interest) on costs per participant or per placement. Those who replied to the query about costs seemed to know their operating budgets and the student capacity of the institute and simply divided the former by the latter.

It appeared that administrators of Government-supported programs receive an annual budget and simply "make do" with the income provided. Officials at the Ministry of Policy Planning supported this notion, implying that budgetary requests from training institutes were rare, and so the rate of payment for such programs has remained relatively level for some time.

Two well-run institutes came up with similar figures:

$2,500/stud/yr - Appenticeship Training Institute (ATI)
$2,600/stud/yr - Diyagala Boy's Town

When queried further, the German sponsored Apprenticeship Training Institute (ATI) indicated that the figures were annual costs figured without an allowance for depreciation. The NAITA estimates institutional costs for apprentices to be $960/student/year.

If there are about 211,000 persons in training in a year (Commission on Youth, 1990) then an estimated $179 million is being spent on vocational/technical training per year. Even if half of the 211,000 are on short-term training with a fraction of the cost, the cost of training would still be around $100 million per year.

IV. ASSESSMENT OF THE INTERNAL EFFICIENCY OF THE SKILLS DEVELOPMENT SYSTEM

THE EDUCATION SQUEEZE

Concern about vocational and technical training capabilities was highlighted through a 1990 report by the Presidential Commission on Youth. The report indicated that many of today's youth were inadequately prepared to enter the work force. Many were undereducated and the majority of those who had received vocational education or training remained unemployed or underemployed afterward. Part of the problem stemmed from the fact that very few students who wanted to enter the academic track actually had the opportunity to do so. In 1987, almost 500,000 students were not able to find further schooling at the university level. In fact, relatively few students progressed satisfactorily through the academic system. Of the 484,797 students who sat for O-level exams, only 95,416 (20%) passed. Of those 112,577 students who sat for A-level exams, only 31,079 (28%) passed. And of those 31,079 students who passed the A-level exams, only 6,143 (20%) entered university. Those 495,815 students who could not move ahead in the academic system were left disenchanted and discouraged (Presidential Commission on Youth 1990).

Students who could not attain their academic goals in higher education were forced into vocational/technical education, which they tended to view as second rate. Their lack of initial enthusiasm coupled with inadequate cognitive challenges within the training system has led to less than adequate job preparation for these young people.

Such problems as inaccessibility to academic education, crowding into vocational/technical training programs, underlying attitudes about the acceptability of vocational/technical training, and disillusionment about a general lack of jobs are viewed as major constraints on the country's ability to generate an effective work force. These issues are central to the revitalization of the vocational/technical system in the country.

TEACHING STAFF

Teachers in the educational system of Sri Lanka face many serious problems. They are underpaid and underqualified. In all sectors, a majority of teachers are working below the degree level required for their positions, as seen in Table IV.1. An average of 73% of academic staff appear to be less than qualified for the jobs they are performing.

TABLE IV.I

Qualifications of Academic Staff by Levels and Sectors

Sector	Educational Qualifications			
	Below degree	With degree	Post Grad	Total
Government	1,459 67.6%	582 27.0%	118 5.4%	2,159 100.0%
Corporations(1)	714 78.5%	121 13.3%	74 8.2%	909 100.0%
Private	829 72.8%	202 17.6%	107 9.6%	1,138 100.0%
Total	**3,002**	**905**	**299**	**4,206**

(1) Boards, commissions, and councils that provide training

Source: Ministry of Plan Implementation 1987

The lack of qualified teachers is particularly serious in the field of technical and vocational education. As seen in Table IV.2 there is a shortage in the number of employed staff at every level in both the Technical Colleges and at the National Technical Teachers Training College (ADB 1989).

Table IV.2

Number of Approved and Employed Teachers, by Levels

	NTTTC		Tech. Colleges	
	Approved	Employed	Approved	Employed
Lecturer Gr. I	21	2	44	0
Lecturer Gr. II	8	14*	228	121
Sr. Instructor	20	20	220	142
Instructor	-	-	372	298
Demonstrator	-	-	96	85
Totals	**49**	**36**	**960**	**646**

* 6 Gr. II lecturers have been appointed from Gr. I cadre as Gr. II lecturers.

Several factors underlie the inability to recruit qualified teachers, especially at the Grade I Lecture positions. These factors include unattractive salaries, ineligibility of Grade II lecturers for promotion, and a lack of in-service training opportunities to obtain post-graduate qualifications.

A further complication is the demand for qualified technical personnel in industry. Qualified teachers with engineering degrees are being siphoned off from the teaching profession to industries within the country and to the international job market. When these trained teachers find lucrative jobs in industry, their energy, enthusiasm, and knowledge are lost to the school system. Teachers who are left feel that they are second rate, which tends to lower their standards and work habits. Even teachers who selected teaching as a first career choice have become disillusioned about the lack of potential career advancement in the vocational educational profession.

Almost 60% of the teaching staff in the Technical Colleges are at the Instructor or Demonstrator level. The minimum qualification for an instructor in some disciplines is a craft certificate, and for demonstrators it is an 0 level with a trade certificate. Only about 10% of the teaching staff at the Technical Colleges have undergone any teacher training. In several site visits, we were told that the teaching staff was recruited from the outstanding students in previous classes. These "teachers" also moved over to industry at the first opportunity because they were not academically qualified to advance in teacher preparation tracks. An additional complication lies with the "trainers" in private industry who usually consist of shopfloor workers with no formal education. In summary, the teaching staff in the vocational and technical training system are poorly prepared and poorly supported in their professions.

Shortages of experienced teachers for the instructional component of the curriculum, and trainers in technical and vocational streams, have led to poor delivery of course content and inefficient utilization of the vocational and technical facilities in the country. There is an urgent need for improved recruitment of all grades of staff, for in-service training in pedagogy and craft skills, and for opportunities for education/training for quality improvement coupled with adequate staff salaries and a progressive career structure.

CURRICULA

An analysis of the technical and vocational education programs reveals that there is no well-defined policy for course and curriculum development. The expansion of technical and vocational education has generally been on an ad hoc basis without well-defined functional and occupational objectives. This has resulted in a proliferation of standards and quality within four different levels of courses for technicians without any linkages between them. A much wider spectrum of courses is observed at the craft levels. The curriculum for these courses consists generally of a teacher's manual or a guide with a list of skills to be learned. This gets diluted during classroom delivery. Further, the instructors in industry, particularly in small industrial establishments, do not have adequate knowledge for imparting trade-related theoretical instruction. The result is a substandard and fragmented curriculum which leads to an inadequately prepared work force.

There is no systematic approach for the development of curricula and courses in the country. Even where there has been some attempt at developing an institution-wide curriculum, such as NTTTC has done for the technician and craft-level courses conducted by Technical Colleges, the institutions seem incapable of implementing standardized curricula. Further, an evaluation system appears to be nonexistent, and no methods for redesigning and upgrading curriculum are evident.

Curricula are designed in isolation from the needs of employers, technology, students, or the society at large. No clear approach exists for integrating technical education with growth strategies to raise productivity using appropriate and up-to-date technology. The curricula are almost invariably narrow trade-training or specialization-oriented, thus limiting the mobility of those trained and their capacity to adapt to changes in technology.

Another issue observed during site visits was that many training institutes (and particularly the NGOs) were training for "self-employment," with little attention being paid to "business and management skills" necessary to sustain a business enterprise. Good product ideas are doomed to failure with poor business management. Large-scale promotion of self-employment schemes as a solution to low levels of industrial employment is a strategy that needs serious examination and periodic assessment.

Because technical/vocational education programs (particularly the "nonformal") are conducted by a number of ministries and agencies, there is a wide variety in course content. Courses are conducted by administering agencies without any attempt to link them to well-defined occupational outcomes. The curriculum content does not appear to be linked in a progression of activity-based and application-oriented sequential learning. An important step in curriculum development is to identify the course level, based on the clear definition of course objectives derived from social, technological, and industrial needs and with reference to standard occupational levels (e.g., Crafts, Technician, Professional).

Standardization of courses and curricula has not happened for several reasons: no one agency has control over the skills-development system; the facilities in each institution vary greatly; and no standard methodology for curriculum development has been identified. There is a need to group courses into a manageable hierarchy of occupational levels with reference to some standard classification of occupations. Without this, it may not be possible to standardize courses for certification to ensure horizontal and vertical mobility of the workers.

When Sri Lanka takes positive steps towards a more industrialized economy, the problem of adapting to rapid technological changes will have to be faced. As this occurs, the educational system will have to change more frequently and more rapidly than in the past.

FACILITIES

Laboratories, workshops, and classroom facilities essential for carrying out a quality program in both the training institutions and the industrial establishments are neither uniform nor adequate. The institutions are in need of machines, raw materials and supplies, appropriate tools, and current reference materials on a continual basis. Operating funds are not available

to cover these expenses.

Institutions developed and initially supported by donors (Germany and Japan) are viewed as model facilities with model programs, but laboratories and workshops (along with curricula) will need to be continually upgraded to meet the demand of any advances in technology. It appears that long-range planning has not yet been considered for these institutions.

Currently, a few attempts are being made to renovate the infrastructure for vocational and technical training. The British Council is financing a Second Technical Education Project for the upgrading of some of the Technical Colleges. The Institute for Construction Training and Development (ICTAD) has funded the remodeling of workshops and equipment facilities in construction technology in some Technical Colleges. The observed pattern is that upgrading is accomplished only through sporadic donor support, and no overall plan for continual improvement is apparent. It is obvious that current laboratory, workshop, and other infrastructural facilities need considerable improvement and continual upgrading to meet the market demand for technicians in a growth-oriented economy.

COORDINATION

Although Sri Lanka has an expansive base for vocational education and training, the base is diffuse and diversified. Training programs need effective coordination and standardization to be useful to industries. Lack of coordination has resulted in a proliferation of courses and certificates. Some of the programs, particularly those developed for employment generation, lack an objective focus and labor-market orientation.

There have been numerous attempts to coordinate activities within the vocational and technical education sector, but for various reasons the situation remains little improved. Most ministries have developed their own schemes to address selected problems within their own domains. Unfortunately, some of these efforts have been inadequate and were taken without reference to existing programs. There is much duplication of effort, and funds are not used to the best advantage. For example, in 1981, the Technical Education Authority was set up to plan, organize, conduct, and sponsor technical and vocational programmes at all levels, and to carry out relevant testing and award certificates. Just two years later, in 1983 the Ministry of Education and the Ministry of Youth Affairs set up a committee to report on tertiary-level vocational and technical education.

Current attempts at coordination also appear to be duplicatory. The Tertiary and Vocational Education Act (June 1990) established a Commission to plan, coordinate, and develop tertiary and vocational education at all levels. The Vocational Training Authority (March 1990) was set up under the Ministry of Youth Affairs and Sports. There is an attempt to restructure the National Apprenticeship Board to include broader functions under the National Apprenticeship Industrial Training Authority. The role of the Dual Training System is being considered by various ministries as a way to better organize vocational and technical training. Under discussion is the Sri Lanka Council of Industries, with activities and functions yet to be identified by legislation. These efforts are serious attempts to address the need of

coordinating the vocational and technical training system, but the approach is still fragmented and disconnected. A decisive strategy must be developed and implemented to rationalize the vocational/technical educational system. Without it the system will remain outdated and ineffective.

V. ASSESSMENT: PROGRAM EFFECTIVENESS

PLACEMENTS

Any evaluation of development investments must address two questions: Is the job being done well, and is it a job worth doing? The first question, which deals with the matter of the internal efficiency of programs, was addressed in the previous section and, with but some exceptions, answered in the negative. This section addresses the second question.

Evidence presented in Appendix A. indicates that more than half of vocational education/training program completors in 1983 remained unemployed in 1985. Those trained in agricultural- related subjects had much higher employment rates (86%) but these were a small proportion (9%) of total completors. Moreover, of those who did manage to find employment after training, a significant proportion (18%) were working in fields unrelated to that training (Ministry of Plan Implementation 1987).

Low placement rates could be the result of unwillingness to accept available jobs at prevailing wage rates by passed through graduates, a simple lack of available jobs, or some combination. Evidence reviewed later in this section inclines us to the "demand deficiency" explanation, but we are sympathetic to the observation by program administrators that a good many young people enter training programs with no intention of pursuing careers in their fields of training. Rather, they are seeking short-term stipends (like their rent-seeking parents), or to fill time while waiting in the queue for Government jobs, or they are looking for a "back door" to further, degree-related education, such as polytechnic or teacher training.

No matter what the cause of these low placement rates, the results are the same--wasted resources as returns to investments fail to be realized. "To put it bluntly, whereas an advanced industrial country could afford to offer vocational courses at the public expense--perhaps as 'enrichment'--even if the graduates pursue careers completely unrelated to such subjects, poorer countries cannot efford to do so" (Psacharopoulos 1987, p.6).

SURVEY OF EMPLOYERS

Consistent with the notion that skills development, at least in the short term, should be directed to the objective of the filling of job vacancies, this mission carried out a survey of 50 firms in and around Colombo and the Free Trade Zone in Katunayake.[11] Limitations on funds and time precluded a wider survey.

No pretense is made that the survey constitutes a scientific sample representation of all firms in the country. In fact, no census frame currently exists from which a sample could be drawn. On the other hand, there is no a priori reason to believe that responses are in any way biased. Firms selected were generally export-oriented, but we also included auto repair shops, printing

[11] Interviews were carried out and results tabulated by the Sri Lankan Business Development Center.

firms, and hotels. The industrial coverage is shown by the percentage distribution of responses to question 1, which is included with other results, in Appendix O at the end of this section.

The survey covered several broad areas of inquiry:

- factors felt to be important in determining profitability (costs, market demand, Government regulations, skills, etc.). This would include the question of whether any specific, hard-to-fill skill vacancies exist;
- sources and methods of labor recruitment;
- provision of on-the-job training;
- the use of outside skills-development sources;
- employer views on outside training sources (e.g., vocational education or apprenticeship programs); and
- respondent opinions of the quality (productivity) of their work forces.

Generally speaking, respondents were the highest level officers who would agree to be interviewed within the selected firms. In smaller establishments (4% of the sampled firms had fewer than 20 employees), this was generally the owner. In larger firms, respondents might be general managers, personnel managers, or production supervisors. We had a decided preference for the latter category, in the belief that they might be better informed as to the actual skills and abilities of employees. Moreover, general or personnel managers might be somewhat defensive about the question of staff quality and thus inclined to provide overly positive assessments of employee productivity.

FACTORS AFFECTING PRODUCTIVITY AND PROFITABILITY

Respondents noted a great many factors that they felt had significant influence on the profitability of their firms. Skills, however, were not considered an important issue. Only 18 of the 50 firms surveyed (36%) indicated that they felt that finding specific skills at prevailing wages was a very important problem, and even fewer felt that finding management or supervisory skills was very problematic (22% each). Material, equipment, or supply costs were considered to be the most important factors in determining profitability, with 90% of respondents listing these as "very important". This is seen more clearly in the answers to question 8, which asked respondents to mention the two factors they considered most important in determining the profitability of their firms. Supply costs again ranked first, followed by interest payments. Wage costs ranked fourth in importance, while problems in finding specific skills ranked sixth among the eighteen factors mentioned. Moreover, of the 44 respondents who considered the question relevant to their experiences, fully half indicated that the availability of qualified employees was not a problem in setting up their firms (question 9).

It is interesting that respondents did not feel that lack of management was a particular problem

for their businesses (question 8, 9), as outside discussions with key informants suggested just the opposite. We can only note that 88% of the firms included in this sample had been in business for more than five years and likely have already adapted to the availability of technical and managerial skills. Moreover, by definition, these are relatively successful firms (although 52% say they are operating at less than 80% of capacity). The management problem may be more applicable to less successful firms, which never get off the ground.

SOURCES AND METHODS OF LABOR RECRUITMENT

Presumably, if employers had positive views about the output of training institutions, they would tilt their recruiting efforts in that direction. There is no evidence of such a tilt in this survey, as the majority of respondents (74%) indicated that they do not bother getting lists of graduates from vocational institutes or universities when they have vacancies. We were given the impression that employers minimized recruiting costs and were encouraged to do so by high labor surplus across most occupational categories. Advertisement of a job vacancy usually implies little more than posting a notice on the front gate.

Selection, on the other hand, is a more complex task, as might be expected when applications outnumber vacancies on the order of 10:1. Most of the firms surveyed required a test for job applicants (question 14), or they put new employees through a probationary period. There are, of course, differences in practices depending on the industry or skill level involved. It appeared that firms operate internal labor markets, hiring entry-level skills at entry-level (low-paid) wages, and promoting only those who show patience with the process. Higher skilled or management positions tend to be filled through internal promotion or through "poaching" experienced workers from industry competitors.

TRAINING--INSIDE AND OUT

Most employers (78%) responded that they provide training for their employees, but the intensity or quality of that training could not be determined without a great deal of probing which time did not permit. A great many responded, however, that their production processes or machinery were so specialized that they were forced to train their workers. This is why 70% of the respondents indicated that they had trouble finding specific technical skills in the open market. A significant number (48%) used outside training resources, particularly seminars and short courses for managers and administrators. What is interesting, however, is that little use seems to be made of vocational institutions as a source for the technical component of the work force. Responses to Question 18 indicated that fewer than 10% of the technical workers in 50% of the firms surveyed have received any formal vocational training. While respondents could have been understating the figure due to ignorance, this in itself is a telling indicator, suggesting that private employers do not include considerations of formal vocational training in their calculations about skills development. Moreover, a significant number of respondents were either unaware of any vocational training programs (26%) or felt that they did not make much of a difference to the firms that used them (16%). Only 18 firms felt that existing programs were "rather good," while a number of respondents complained of lack of training in their business fields--(packaging for exports was an example

of this).

Employers had few specific ideas about how programs could be improved. Most (54%) admitted they had not really thought about this. There was general agreement that trainees need more practical experience and less theory, and an interest in having workers learn the meaning of quality work, but by and large, there were limited responses to these questions. This seems to reflect the fact that employers don't really know what goes on in vocational training programs and consequently are ill-prepared to offer recommendations for improvement.

The central conclusion to be drawn from such results is that a serious gap exists between the training system and employers in Sri Lanka. The training industry seems to be operating in isolation from the needs of the private sector and has been cut off by that sector in consequence. It is therefore hardly surprising that placement rates are low and that Government programs are being forced to focus on training for self employment.

VIEWS ON THE QUALITY OF EMPLOYEES

Question 22 was designed to elicit employers' assessments of the quality of their work forces. It would appear, overall, that employers have adapted their aspirations and expectations to what they perceive to be extant realities. By and large, they appear content with what they have. We are concerned that there may have been some bias in these responses in that informal follow-up discussions with members of the Employers Association and Chamber of Commerce suggested more problems than these survey results indicate.

In particular, 58% of surveyed respondents agreed to the statement that their employees required too much supervision (question 22.1). Yet our informal discussions suggested that this is a yet more pervasive problem. There was, however, general agreement that while specific skill shortages are not a particular problem (in that they can be handled through on-the-job-training), general productivity and work performance are (question 22.3). Half of the respondents (50%) felt that there are plenty of good workers, but a few (notably machine service and repair) felt constrained by a lack of workers. In these cases, the problem appears to be that once workers are trained they migrate for employment outside the country.

In consonance with previous results, there was general agreement with the statement that the majority of current business problems were due to other than skills deficits (question 22.4). Also, results reinforce the observation that most training in Sri Lanka, i.e., most of the skills used in private industry, is generated on the job. At least for the moment, that appears to be how employers would like to keep things. Sixty four per cent of the respondents indicated that they don't really want to hire trained workers. They prefer to hire trainable workers and teach them on the job (question 22.5).

VI. CONCLUSIONS

SUMMARY OF FINDINGS

The quality (if not the quantity) of human capital investments and skills development programs appears to have significantly deteriorated in Sri Lanka over the last several years, along with other complementary inputs to the growth process. In response to declining real incomes and mounting poverty, the Government has been prompted to reorient human resource development strategy away from what should be a growth-facilitating objective, in favor of an equity objective. Contemporaneously, funds for program operations (e.g., maintenance, materials, and overhead) have had to be curtailed and thinly stretched over an already weak foundation. Programs have been increasingly targeted on the lowest level of the skills spectrum in what appears to be a strategy designed to facilitate "coping with constrained reality." This strategy evolved from political imperatives more than from economic aspirations. It has partially served its purpose of accomodating slow growth, but did not succeed in preparing the way for faster future growth.

Young people have been crowded into vocational training institutions not because of inclinations, but because they have been crowded out of the academic mainstream and alternative productive pursuits. They are often given poor instruction by unqualified, underpaid instructors, using outmoded equipment with insufficient supporting materials.

By design in response to perceived default, the public sector dominates the field of skills development, and quite expectedly, linkages with private sector employers are weak. Moreover, the resulting "system" is fragmented, uncoordinated, and wasteful. Each agency runs its own separate program in isolation from the next, and economies of scale remain unrealized. Aside from the apprenticeship system (which is plagued by a different set of problems), the majority of training is provided institutionally, with insufficient opportunities for practical experience. Programs generate credentials, but these are not always reflective of competencies nor even of likely future motivation.

There are bright spots, to be sure, as is only natural if the population being sampled is sufficiently large, and nearly 3,000 institutions is a large sample. The German and Japanese-funded training centers are, as would be expected, showpieces. Neither set of institutions has yet had to confront the reality of lack of operating capital, and both are oversubscribed by applicants and recruiting employers. There is a tendency among international donors to support the construction of facilities, which is a high foreign-exchange-using activity, and then to walk away, leaving countries to shoulder the burden of operating costs out of local funds. For the moment, Sri Lanka does not have many "local funds".

The deterioration in Sri Lanka's skill development "system" is a direct result of a combination of factors, which are in turn related to the prolonged economic malaise associated with the ethnic and political turmoil of the past decade. Over this period, the private business sector has had to deal with mounting problems--decreased foreign investment, increased taxes to support defense and transfer expenditures, declines in consumer demand and investable funds, price controls, constantly changing government regulations, and a deteriorating inadequate

economic infrastructure. Private-sector adaptations to these reinforcing constraints have hardly been conducive to human capital investments. The capital stock has been allowed to deteriorate, and employers have shifted to low-skilled production techniques, overstaffing to account for absenteeism and low productivity, built-in scheduling delays, the breaking of tasks into their simplest components, and compensation with low wages and selling prices. While wages are low, however, unit labor costs are not. "Cheap labor" has led to inefficient production processes and resource waste, particularly with natural resources. The few skill investments that have been made are in firm-specific human capital, not in industry-general human capital. Thus, while a few individual firms may have prospered, there has been very little industry growth, except for the garment sector where, if special trade concessions lapse, the outlook is not particularly bright.

Then again, outside the plantation sector, there are few competitive industries as such. There are often atomistic, sometimes monopolistic firms, but even then economies of scale are rarely realized. This presents a serious obstacle to the development of a skills training system.

We find no particular evidence of anti-skill-development bias in existing labor regulations. Rather, certain regulations appear to be biased against labor utilization as a whole (e.g., minimum wages, seniority systems, severance provisions), or against investments in general (high corporate tax rates, price controls), and this, in turn, is likely to impede human capital investments. At the same time, exemption of apprentices from severance protection is a pro-skill-development feature of regulations.

IMPROVING THE ENVIRONMENT

We have noted that lack of skills is but one of many interlocking constraints on Sri Lanka's development prospects and that the skills development objective can only be attained as part of a larger package of corrective inputs. We further suggest that while certain specific skills are in short supply, the overwhelming problem is with noncognitive skills: attitudes, motivation, attention to quality, and a willingness to assume responsibility or take the initiative. It is not enough to know *how* to do a particular job; it is also necessary to know *when* to do the job (e.g., preventive maintenance), and to have the sense of commitment to insure that the job gets done. Moreover, a prior condition is *willingness* to do the job, a condition which, for various reasons, appears lacking among secondary school leavers.

A great many steps are required to improve the competitive environment in Sri Lanka. Some have been taken, and others are about to be. As a general matter, there appears to be a pervasive degree of suspicion and competition here: the Government distrusts the private sector, and one Ministry distrusts the next. While not demeaning the very real benefits of competitive spirit, and indeed noting that the economy is still pervaded by monopolistic elements and practices, we can only suggest that the achievement of social objectives requires a large degree of social cohesion, cooperation, and coordination.

From the perspective of private-sector business development, a certain degree of consistency is required as well. Rules, regulations, enforcement agencies, and staff are changed with disturbing frequency. This in itself is a serious disincentive to investment, particularly to

foreign investment. While the Government has announced its intention to promote foreign investment, it seems to be implementing that policy with reluctance and with a lack of understanding as to the policy's constraints. It is not merely ethnic or political conflicts that have diverted investments to Taiwan, Thailand, Malaysia, and other emerging "Asian Tigers." It is because those countries look to business developers as partners, rather than as adversaries, in social development.

Consistency is required across time but also across programs and regulations. Businessmen complain of a piecemeal regulatory system subject to the whims of individual Members of Parliament or Ministers. Often one piece of the system is in direct conflict with others. We would mention the impact of the tariff structure on small business development (import substitutes) as an illustration of this inconsistency. Similarly, severance provisions that raise the effective costs of firing redundant labor serve to raise the costs of hiring the unemployed.

We would single out the compensation system (wage policy) as an area of particular importance for skills development. While we did not have the opportunity to examine this question in detail, we have the impression that reliance on nonmarket solutions to wage setting has created serious disincentives to human capital investments by individuals and employers. We are not simply referring here to average wages and productivity, although we admit that this is an important topic. What we are particularly concerned with is the wage *structure* and differential returns to human capital investments. We note that the Minister of Labour has called for the creation of a Wage Policy Commission, and the matter is being studied in the Ministry of Policy Planning and Implementation. We can only hope that the opportunity is taken to examine the full wage structure and its impact on prices, incomes, and returns to human capital, and that the exercise not be limited to the mere setting of minimum wages in particular industries. We would suggest that improper incentive structures are at the heart of unproductive waiting for public-sector jobs, the pervasive rent seeking (as opposed to profit motivation) that we have observed throughout the economy, anti-manual-labor attitudes among youth, and even the shortage of qualified instructors within vocational training institutions. As a general matter, the availability of low-wage labor appears to be hindering the introduction of modern technology and encouraging inefficient production processes.

STRATEGIC INTERVENTIONS

It is clear, given the tight budgetary outlook, that Government interventions into the areas of business development and export promotion will perforce be limited and selective. We suspect that the most effective use of limited funds is to select a few promising growth areas and concentrate resources on relaxing a few of the critical constraints that now impede their growth. The first step is to identify export- or import-substitution opportunities. By and large, we do not see sufficient attention being given to this identification task, but we see some signs of change.

The USAID-funded TIPS Project (Technology Improvement for the Private Sector) is an illustration of the approach we would advocate: the identification of possible market niches, and the successive relaxation of constraints on access to those niches. Skills are one of those constraints and, as a first step, technical assistance (showing by doing) can be used to fill the

gap. That technical assistance should be driven by the demands of private industry. For the longer term, overseas training, short-term training courses in-country, and ancillary services might be envisioned.

We note that such an approach closely parallels the rather successful industry/educational partnerships formed in recent years in the United States. Community colleges, in particular, have been extremely effective in training for industry, in carrying out training and financial audits, in analyzing obstacles to profitability and productivity, and in working together with corporate managers to expand business. This is a sort of high-level management consultancy effort, drawing on the resources of the educational/skills development sector. We note that, although management consultant firms are beginning to emerge in Sri Lanka, this is still an activity which needs expansion. Moreover, few such existing firms have the full array of required technical skills within their staff. They can help map out broad strategies but lack the practical industry experience necessary to see that those strategies are implemented. What are needed are what we would call profit-oriented "Business Assistance Centers".[12]

It might be noted that this notion of limited, progressive interventions is not entirely consistent with the concept of decentralization (devolution), which seems to call for simultaneous interventions across all Districts at the same time. We point out that decentralization of decision-making authority does not necessarily imply decentralization of the resource base. We rather suspect that the skills development system has been weakened by the dilution of resources which has resulted from trying to establish training centers in each and every district. Local progams can serve localities, but not necesarily such national intererests as export promotion. The relative costs of national or regional centers with residential facilities should be compared with the costs of more district-level facilities without provision for residency.

IMPROVING THE EXISTING SYSTEM

Mindful that sunk costs are sunk and thus irretrievable, it stands to reason that no one wishes merely to walk away from the existing 3000 or so training institutions and to build a new system from scratch. It therefore makes sense to try to upgrade what is already in place, gradually, and in phased, targeted fashion.

The strategy would be to create successive "centers of excellence," strongly linked to the private sector. This requires funds for the renovation of facilities, the upgrading of equipment, and, particularly, support for operating costs. Consolidation is a principle objective of this component. As a first priority, there is a serious need for instructor upgrading and professionalization.[13] Admittedly, such an effort must confront the problem of migration

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[12] In Botswana, USAID funded a project in which members of established firms provided technical consultancies to smaller or recently-established firms. Monies were channeled through the equivalent of the Chamber of Commerce. We stress we are not advocating the further creation of publicly-controlled facilities, but the development of service delivery mechanisms within the private sector.

[13] We reiterate that this might need to be accompanied by changes in pay scales. One scheme which could contribute to this upgrading would be to bring out some U.S. vocational eductors to work with Sri Lankan counterparts during the summer months.

overseas, but we suspect this could be overcome with a carefully structured loan system. A second priority would be the provision of books and audio-visual aids, which all agree is a serious deficiency at present. Given what we perceive to be youth aspirations, we would suggest that the objective of skills development should not be to dilute educational programs through "vocationalization" for those who do not really want them, but through "educationalization" of vocational programs for those who want those alternatives. This implies the extension of opportunities for progression to higher technical skills through polytechnic degrees and a certain degree of upgrading or professionalization of vocational occupations. Clearly, the private sector needs to be more involved in the skills development process. This requires two improvements: better linkages between employers and the training sector (Hershbach, 1985), and upgraded on-the-job training. Regarding the first, the notion of Business Assistance Centers mentioned above is one response. The creation of tripartite training councils to guide curriculum development, testing, certification, and the monitoring of employment outcomes of training completors would be another. Such councils require a great deal of time, effort, and perseverance, yet successful examples do exist (CADERH in Honduras and the Vocational Training Corporation in Jordan [14]).

One problem which emerged in our assessment of institutional training programs in Sri Lanka is what appears to be a certain degree of over specificity, relative to available resources. As a long-term objective, Government interventions in favor of skills development for pre-employment should probably be limited to the provision of general, noncognitive skills, with employers charged with the task of more specific skills development on the job. Later during the life cycle, the public sector could combine with private industry to provide work/study opportunities aimed at preventing skill depreciation and providing skills upgrading for the employed (or retraining for the unemployed). We are suggesting that, by concentrating the majority of its resources on specific skills development for first-job entrants, the Government has failed to realize its comparative advantage and has ignored the experience of other developing countries (Dougherty 1989).

Regarding on-the-job training (where rates of return are typically 2-3 times as high as institutional training), the key is to induce firms to provide industry-wide training, rather than limiting themselves to firm-specific training. Without special incentives, employers fear that training investments may be lost to competitors. Of course, if all were to make such investments in concert, everyone would benefit. Skills which are lost to competitors could be replaced from the enlarged pool within the industry. To a degree, this is the rationale behind Sri Lanka's apprenticeship program. Although the program includes a testing component, we are unclear as to how effective it has been in insuring that training is actually provided by firms.[15] It strikes us that while better tests need to be more seriously applied, the system might be further strengthened with the use of vouchers, so that apprentices might be able to choose where they get trained.

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[14] Jordan's case is illustrative of the difficulties of attempting to impose supply-side solutions on what is essentially a problem of demand deficiency. When Jordan's economy was booming in the 1970's and early 1980's, fuelled by Gulf prosperity, the VTC earned well-deserved recognition as a partner in development. Toward the end of the 1980's, labor demand fell off, placements declined and the entity has since been contracted.

[15] It is not clear how firms whose apprentices fail examinations can be sanctioned.

In fact, we note that, since human capital investments yield returns which benefit individuals as well as employers and society at large, individuals have an obligation to share in investment costs. Currently the educational/training system in Sri Lanka is heavily subsidized by the public sector. We see a strong need, and justification, for user fees and other mechanisms to encourage self investment in human capital. Admittedly society does not wish to price the poor out of the skills-development market, but this argues for income-targeted subsidization. There is no reason why the sons and daughters of the wealthy, or employed earners, cannot be charged for skills development.[16]

An important component of this system development is certification and testing. Employers need to be assured of a quality output of training. Right now, there is no basis for judging the good and bad.

FINANCING

Clearly the two most significant impediments to the construction of a true human capital development system in Sri Lanka are lack of will and money. Neither without the other will serve any purpose, but the former is certainly easier to generate when the latter is present. If the Government is serious about upgrading skills in anticipation of technology absorption, it will have to somehow earmark special funds for the purpose .

It is not that the public sector must bear the full-cost burden of all human capital investments in the country, but it must have sufficient resources to leverage the necesary investments from individuals, firms, donors, and facilitating non-government oranizations. Moreover, it must have funds to monitor the process and to insure that investments are tilted in favor of the most cost-effective alternatives.

This suggests the desirability of creating a human capital investment fund which could be used to upgrade facilities, purchase supporting teaching materials, finance special short-term courses, provide loans to low-income applicants, etc. We suggest that the proceeds of such a fund might better be spent on the demand side of the skills-development market (employers and potential trainees), with the intention of inducing responsive growth from private (or non-profit) suppliers. This, of course, would be a gradual process, with initial funds invested in the upgrading of existing programs.

Other countries, particularly in Latin America, finance such funds with a special tax (levy) on employers. Traditionally such a tax is based on payrolls, but as this builds in a bias against labor utilization, it might be better to use a sales or a value-added tax. Admittedly, Sri Lankan employers are already being overtaxed and such an option does not appear immediately feasible. The development of such a system should, however, be a longer term objective. As an interim measure, consideration might be given to using some portion of Employer/Employee Provident or Trust Funds to finance a loan program for human capital investments (e.g., through vouchers). Currently those funds are being used to support general Government

[16] Since June of 1990, stipends to apprentices are supposedly restricted to members of poor families. Other training programs continue to be non-means tested.

expenditures with an implicit rate of return of about 6% (as opposed to the current market rate of 20%).

The key to these levy systems is how proceeds are used to encourage firms to invest in the human capital of their employees. Such systems are, in fact, known as "levy/grant" systems. Employers can be provided tax credits or direct subsidies to purchase or otherwise provide training for employees. An appealing variant would be to provide a tax credit to firms for each employee who passes a certified industry examination (competency-based). This would imply subsidization (or tax forgiveness) by result, rather than by inputs. The development of competency-based examinations is no easy task, but it is an area in which USAID has been active in other countries (Costa Rica, Honduras). The International Labor Organization is working with the construction industry to develop such tests (the ICTAD Project).

PROVIDING THE OVERHEAD

Inconsistencies and fragmentation in the current system have been noted. We have observed that lack of coordination has prevented the realization of economies of scale and the rise of too many institutions with too little funding. The private sector is not linked into the system because there is no system with which to link.

The creation of a high-level national training authority thus has appeal, particularly if the concept of a training fund is pursued. We hasten to add that we are speaking of something very different than the vocational education authority now under the responsibility of the Ministry of Youth Affairs and Sports, or the proposal advanced by the Minister of Labour to create a similar competing authority under that Ministry. In fact, we would see the public sector as having only a minority voice in the new authority, with the lead being taken by employers, unions, and NGO's. We stress that we are speaking of a national authority, which would have oversight over similar local bodies (or councils) located in individual Districts or localities.

Clearly strategic planning is an important component of any effort to create a skill development system. We are aware that USAID is funding a manpower planning effort within the Ministry of Policy Planning, but we must observe that such exercises are more appropriate for labor shortage, than for labour surplus, situations such as now confronting Sri Lanka. We see an important role for such a unit, extending beyond the simple projection of disequilibrium situations. Analysis of business development prospects and the identification of export opportunities are activities which could fruitfully be pursued by such a planning unit. There are additional activities which could be prompted (but not necessarily carried out) by a human resource planning unit--tracer studies of program completors, the identification of critical unfilled job vacancies, labor market signalling to anticipate changing conditions, wage policy analyses, etc.

DEALING WITH THOSE LEFT BEHIND

The previous discussion (and options) is purely directed to the growth objective, which we

have stressed should be kept separate from the equity objective. Building business, we feel, is distinct from distributing profits. We have observed that the current system mixes these two approaches and suffers in consequence. Employers begin to feel that "poor people's programs" are poor programs and they shy away from participation in those programs in consequence.

We would distinguish between policies aimed at the redistribution of income in the short term, and policies designed to insure an equitable distribution of access to earning opportunities in the future. As it turns out, skills development programs are inefficient transfer devices and thus inappropriate for short-term redistributional objectives. Skills development investments should be allocated in accordance with potential productivity, not current income. Moreover, such investments take a long time to mature and rarely generate the rapid returns required by poverty alleviation objectives. On the other hand, skills permit opportunities to be accessed and policy can improve the distribution of that access.

There are or are likely to be, a number of distinct aspects to Sri Lanka's poverty alleviation strategy. There is the pure transfer component which is embodied in the food stamp program and is intended to be at the core of the "Janasaviya" scheme. The potential contribution of skills development to the attainment of this transfer objective is small. Employment promotion, on the other hand, implies the development of small-and medium-scale industries which can be assisted by skill-development efforts. Agricultural development, such as the extension of cultivation to new areas, multiple cropping, crop diversification, linkages to agro-processing opportunities, etc., requires the demonstration of new techniques and profit opportunities. Here the problem is not so much skills but knowledge. In other words, there are crossovers between the growth and equity components of the development strategy. Some of these crossovers imply skill development, but others do not.

The investment component of the "Janasaviya" program (funds to be lent for self employment) raises a number of questions, but not necessarily related to skills development. Clearly some sort of assistance will be required to insure that recipients can make effective investments (management and financial guidance). Beyond this, it is not clear what proportion of the population can benefit from this aspect of the program--presumably, it should be reserved for those who have an interest, and whose primary reason for being in poverty is lack of capital, which we suspect is a small proportion of the total. As to the remaining majority, we are curious as to why there has been such little discussion of investment pooling, mutual funds, and similar schemes. In Indonesia, to cite one example, large corporations are selling shares to local co-operatives in an effort to redistribute not income, but wealth. How well this scheme will work remains to be seen, but it does have the advantage of not requiring active management ability from every and all participants.

CONCLUDING OBSERVATION

One of the central messages of this report has been that the demand for skill development should be looked on as a derived demand, derived ultimately from the services and incomes those skills can generate. Skills development is not an end in itself, but an intermediate input. Sometimes, the ultimate objective is output and growth, other times the objective is increasing

the efficiency of transfer programs. The kinds of skills or ancillary services which are required in each case are different.

Our inquiry began with the question, how can the private sector be induced to participate more fully in Sri Lanka's skills development process? Our answer is that a great many things can be done, but a lot of preconditions must be satisfied before they are likely to be effective. If one is interested in launching an experiment to determine the feasibility of "privatizing" the training system, there may be more favorable environments than Sri Lanka. Before speaking of private-sector participation in any social policy, it might be necessary first to ensure private-sector development.

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APPENDIX A

APPENDIX A

Assessing the Cost-Effectiveness of Training Programs in Sri Lanka

THE TRADITIONAL APPROACH

The standard way of measuring economic returns to investments in skills development is with the use of an experimental design. A given population of individuals with like characteristics is randomly assigned to either of two groups--an experimental group, which receives a stipulated set of training courses, and a control group, which receives no training. Costs associated with the former group are recorded, usually in terms of fixed, variable, and overhead components. Thereafter, employment and earnings patterns of the two groups are compared over time (expected working life). If employment chances are equal between the two groups but training completors earn, on average, 10% more than those who were not trained, then the benefit of training is calculated at 10%. This is expressed in monetary terms (e.g., a difference in earnings of, say, Rs. 400,000 for a 30-year working life) and the result is compared with costs. For example, the training program might cost Rs. 10,000 to generate the Rs. 400,000 benefit which, when discounted over the 30-year period, could compare favorably with alternative uses of investable funds.

In reality, the calculations are considerably complicated by the need to control for different background characteristics among those who go through training relative to those who do not, and for different employment experiences over the life cycle. Ideally, data would be available separately for experimental and control groups for each and every year of their respective working lives. Some persons may have sporadic unemployment throughout their lives, but find their first jobs easily; others may have a lengthy duration of unemployment while waiting for their first jobs but steady employment thereafter, etc. The wage component of the calculation is particularly important. The differential effect of training on the chances of finding first jobs may be small, but the impact on subsequent wage rates may be large. The idea, then, is to sum earnings (wages times hours times weeks worked) across all the years of labor market activity of control and experimental individuals to determine whether the (presumed) difference is sufficiently positive to cover the training investment.

AVAILABLE DATA

A 1985 (reverse) tracer study of 493 individuals who had completed some form of Government-provided training by 1983 was carried out by the then Employment and Manpower Planning Division of the Ministry of Plan Implementation (since dissolved). The study did not collect data on those who had not gone through training, nor even on those who might have started, but not completed, a program. Details on the characteristics of the sample, or of the population it purportedly represented (i.e., weights) are a bit unclear (Ministry of Plan Implementation, 1987, pp. 2-6).

Although the report provides information on fields of study, reasons for taking training, and other details, the only data relevant to the cost-effectiveness question are those provided in Table II.A.1

It will be noted that more than 50% of program completors were unemployed two years after their training, although some may have been employed at some time during the 2-year interval. Although we have no way of knowing whether untrained peers fared better or worse than this group of training graduates, an employment rate of less than 50% strongly suggests that the training was not cost-effective. To determine this with certainty, we would have to know something about the wages of this employed group (relative to those who had not undergone training) and to have more data on their lifetime experiences (not just 2 years). What data are available do not contradict the hypothesis that training in Sri Lanka has not been cost-effective, because of a general lack of jobs or a desire among training graduates to wait for high-wage job openings in the modern sector (public or private).

TABLE II. A.1

Employment Status of Training Program Completors

Field of Training		Employed	Unemployed	Self Employed	Total
1. Professional, Technical and related	No.	61	62	2	135
	%	48.8	49.6	1.6	100.0
2. Clerical and related	No	34	49	2	85
	%	40.0	57.6	2.4	100.0
3. Service work	No	-	-	1	1
	%	-	-	100.0	100.0
4. Agriculture and related	No	36	3	3	42
	%	85.7	7.1	7.1	100.0
5. Production and related	No	88	121	6	215
	%	40.9	56.3	2.8	100.0
Total	No	219	235	24	478
	%	46.8	50.2	3.0	100.0

The study did not provide data on costs of training, but similar studies in other countries have found vocational training to be extremely expensive, about 3-5 times as costly as normal secondary education (Psacharopolous, 1987). The only institution from which cost data could be secured in Sri Lanka was the Apprenticeship Training Institute, an admittedly "gold plated"

program. Administrators estimate that the institutional component of their program costs about Rs. 100,000 (US$2500) per person year. This may not include the depreciated value of facilities and equipment, however. Even small costs can hardly be justified by subsequent placement rates of less than 50%.

CONCEPTUAL PROBLEMS

There are a number of conceptual difficulties with cost-benefit calculations for skill development programs, even where the desired data exist. Suppose, for example, that a significantly greater proportion of training completors find jobs than a similar group who have not undertaken training. This does not necessarily mean that training has increased economic efficiency. It could simply mean that the former group has displaced the latter in employment, perhaps due to business contacts from instructors. The question to be addressed is whether aggregate employment or productivity have increased, not merely whether unemployment has been redistributed.

Moreover, as has been noted, the goal of skills development within a developing economy should be to reduce the skills constraint on growth. This means that skill shortages should not hamper the absorption of capital and technology, but this sort of (future) macroeconomic effect is not amendable to cost-benefit ratios that are (past or current) measurements applicable within a partial equilibirum framework, with all other influences (save training) held constant. Capital absorption and its effects on growth can only be analyzed within a general equilibrium framework where interactions and feedback are measured. In the skills development area, traditional cost-effectiveness measures are *least* relevant for the assessment of the *most* important effects of the process.

WHAT TO DO?

While cost-effectiveness measures may not be suitable for such broad questions as the impact of human capital investments on growth prospects, they are useful for other policy questions. Within the area of transfer/equity concerns, for example, Government may wish to redistribute access to limited job opportunities and to use skill training programs to effect this redistribution. Here, the concern is not really to increase product or output so much as it is to tilt limited available opportunities in favor of the unemployed. In this case, partial equilibrium measures are suitable and placement/wage rate data are appropriate indicators of the rate of attainment of policy objectives.

The required statistical indicators for such assessments are those outlined previously, i.e., placement rates, and subsequent employment/earnings profiles for training completors compared with others who did not go through such programs. A very useful activity in this regard would be a longer term tracer study (which can serve other purposes as well), covering say, 20 years of economic activity. This would provide meaningful data on the effectiveness of a set of policy interventions--i.e., measures on the outcomes of programs--as opposed to intended outcomes such as those derived from manpower planning exercises (Kelly, 1990). Put another way, these sorts of cost/benefit measures permit program monitoring as opposed to program control. They may therefore provide a superior method for planning, in an uncertain economic environment, than less efficacious simple projections of past trends.

APPENDIX B

Inventory of Vocational and Technical Training Institutes
in Sri Lanka

1. Name of Institution _____

2. Classification:

_____	Government/Public	_____	Formal (degree)
_____	Private	_____	Informal
_____	Corporation/Industry		

3. What major programs and courses do you offer?
   Programs: Courses:

4. List capacity of each program and utilization rate.

5. List reasons for being below capacity
   a. teachers = lack/low salaries/undertrained
   b. facilities/equipment = lack/no funds/inadequate
   c. job placements = no jobs
   d. lack of interest/awareness of students
   e. operating funds = low
   f. students can't afford
   g. _____
   h. _____

6. List reasons for being above capacity
   a. _____
   b. _____
   c. _____

7. What are the areas of critical need in Voc/Tech Ed and why?

_____ _____

_____ _____

_____ _____

8. Who is (I) and who should be (SB) responsible for the following activities?

Activity	Government	Private	Employer
Training Facilities			
Teachers/Trainers			
Funding/Tuition			
Matching Training with Job Opportunity			
Other			

9. How is the curriculum determined in your institution?

10. How are curriculum needs identified, updated, and revised?

11. What is your institution's involvement in any type of work-study programs? Would you like to see this involvement increased or decreased?

12. Where do you get your teachers/instructors?

13. Are the teachers adequately prepared? ____Yes ____No? If not, what requirements would you like them to have?

14. What is the cost
    per student? _____
    per hour of instruction? _____
    per program? _____

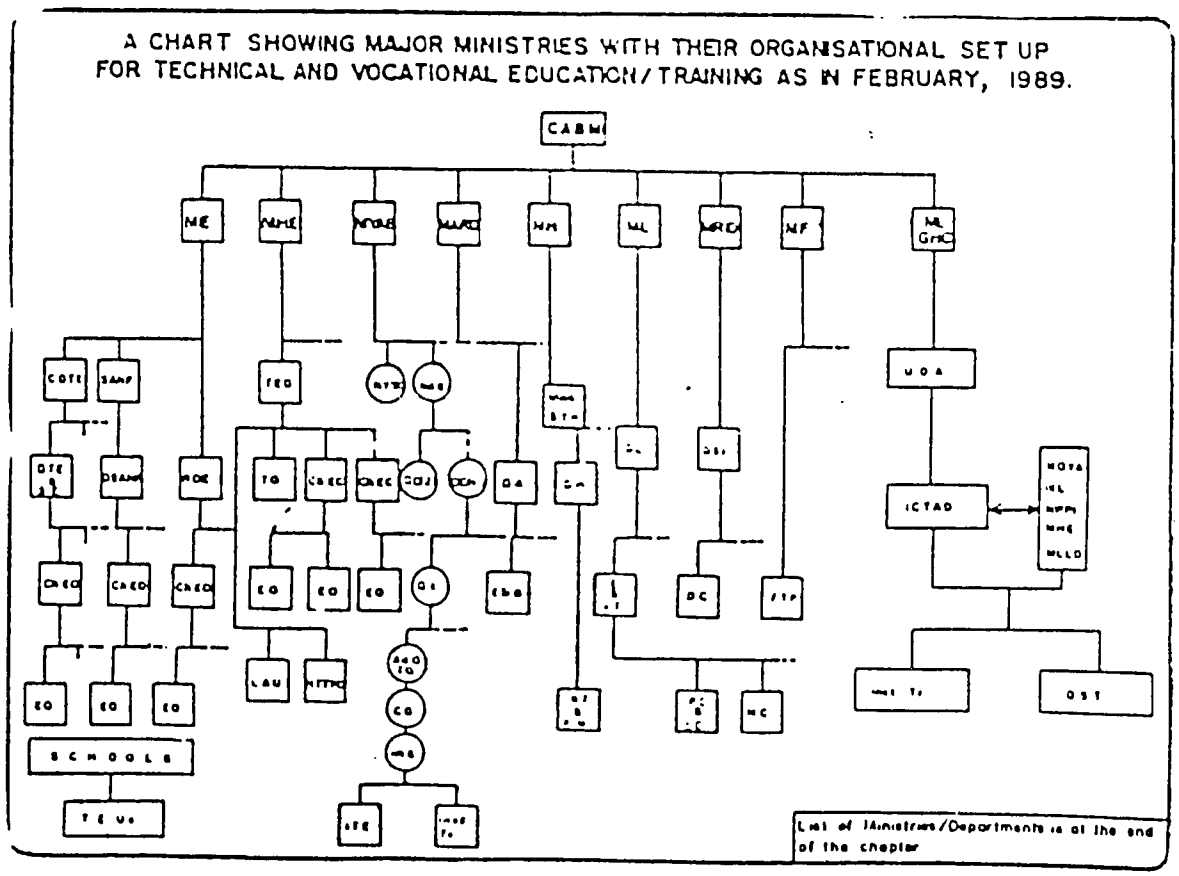
15. What are the placement rates of your students within 6 months after completing your program? _____

16. What are the wages of your students compared with students with no education or training working in the same kind of job?

17. Of the students who finish your program, what percent are able to find jobs using the skills they were trained for?

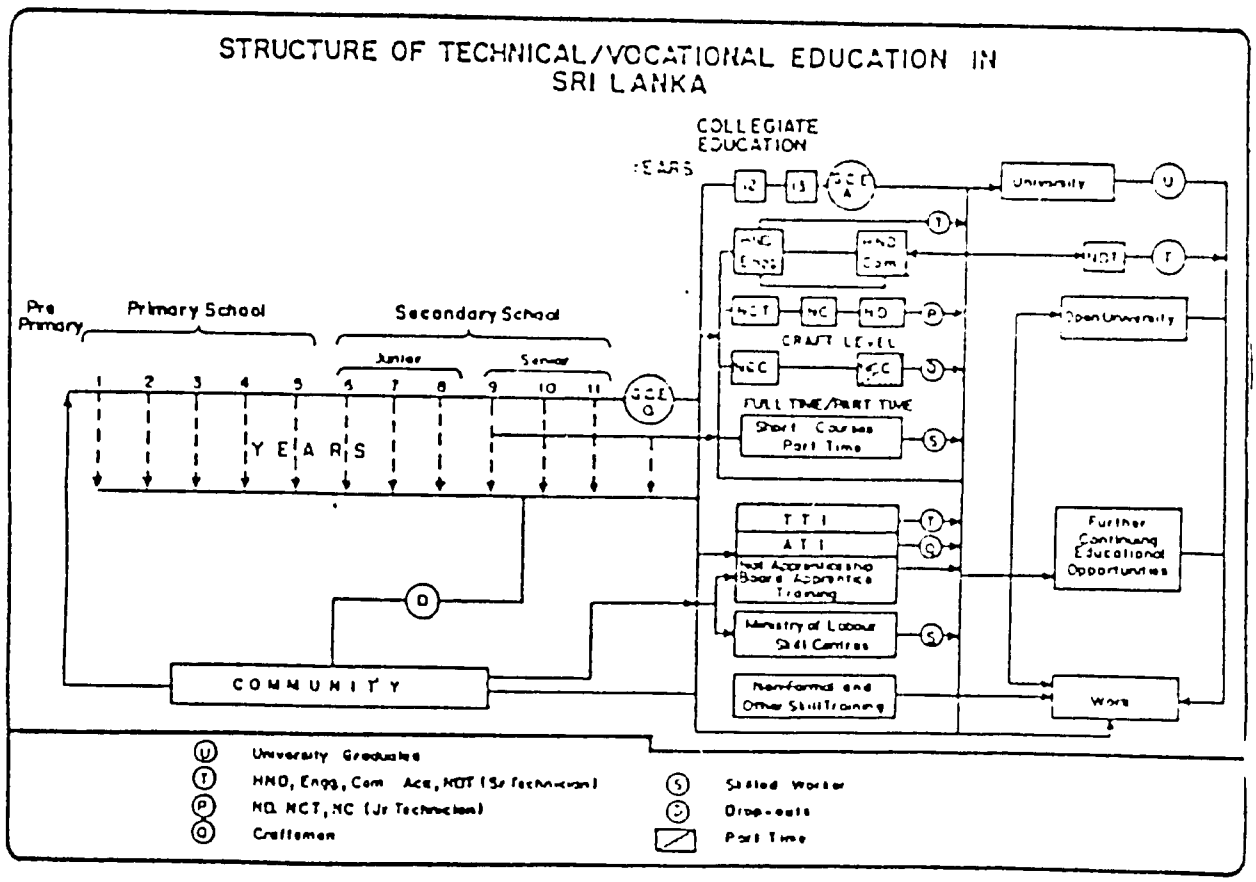
18. What would you like to see changed in the Vocational and Technical Educational system?

APPENDIX C



Source: Asian Development Bank, 1989.

APPENDIX D



Source: Asian Development Bank, 1989.

APPENDIX E

Technical Colleges
(Grade-wise)

Name of College	Location	When Established
(a) National Technical Teacher Training College	Waidya Road Dehiwala	1983
(b) Grade I Technical Colleges		
1. Sri Lanka Technical College	2nd Division, Maradana, Colombo 10	1894
2. Hardy Technical College	Ingiriyagala Road, Ampara	1960
3. Badulla	Greenland Drive, Badulla	1962
4. Galle	Kaluwella, Galle	1957
5. Dehiwala	Waidya Road, Dehiwala.	1968
6. Jaffna	Brown Road, Jaffna	1959
7. Kandy	Arruppola, Kandy	1975
	Kandy Branch, Hantana Road, Kandy	1975
8. Warakapola	Ambagala Road, Warakapola	1978
9. Kuliyapitiya	Pannala Road, Kuliyapitiya	1978
10. Beliatta	Puwakdandawa, Beliatta	1985
11. Kurunegala	Puttalam Road, Kurunegala	1965
12. Sri Lanka Construction Industry Maintenance & Training Centre (SLIM & TC)	St. Thomus Road, Wewatenna, Bandarawela	1987
13. Ratmalana	Galle Road, Ratmalana	1988
(c) Grade II Technical Colleges		
1. Anuradhapura	New Town Anuradhapura	1965
2. Dambulla	Matale Road Dambulla	1982
3. Hasalaka	Yoda Ela Road Hasalaka	1981
4. Homagama	Godagama Homagama	1979
5. Kalutara	Kalamulla, Kalutara	1974
6. Kegalle	Kachchan Road, Kegalle	1964
7. Matara	Welegoda, Matara	1974
8. Mattakkuliya	Rodrigo Place Colombo 15	1978
9. Nuwara Eliya	Jayathilaka Mawatha, Nuwara-Eliya	1979
10. Ratnapura	Palm Garden, Colombo Road, Ratnapura	1975
11. Sammanthurai	Ampara Road, Sammanthurai	1974
(d) Affiliated Technical Units		
1. Batapitiya	Wapauwa, off Station Road, Balapitiya	1982
2. Patha Dumbara	Navayalathenna, Katugastota	1978
3. Wariyapola	Chilaw Road, Wariyapola	1982
4. Batticaloa	Manchan Thoduwai, Kattakundy	1983
5. Moneragale	Potuvil Road, Siriyala: Moneragale	1988
6. Gampaha	Bandaranaike Gampaha	1989

Source: Asian Development Bank, 1989.

APPENDIX F

Courses Offered by Technical Colleges

Higher National Diploma Courses (HND)

- HND in Accountancy
- HND in Commerce
- HND in Civil Engineering
- HND in Mechanical Engineering
- HND in Electrical Engineering

National Diploma Courses (ND)

- ND in Agriculture
- ND in Business Studies
- ND in Home Economics
- ND in English
- ND in English (Part time)
- ND in Jewelry Design and Manufacture

National Certificate Courses (NC)

- NC in Business Studies (New syl.)
- NC in Business Studies
- NC in Business Studies (Part time evenings)

- Stenographers Certificate (Full time day)
  Stenographers Certificate (Part time evening)

- Salesmanship Sales Management
- NC in Technology
- NC in Civil Engineering Technology
- NC in Mechanical Engineering Technology
- NC in Electrical and Electronic Engineering Technology
- NC in Quantity Surveying
- Draughtsman Apprentices Certificate
- NC in Gem Industry

- National Certificate for Labour and Tax Return Clerks
- National Certificate in English for Commerce Industry and Further Education (Part time evenings)
- NC in Secretarial Practice

- Pre-HNC Qualifying Course

Short Courses Offered to Other Organizations

- Six months basic training programme provided to the National Apprenticeship Board
- Wood Work
- Electrical Wiring
- Automotive Mechanics
- Fitting

National Craft (Trade) Certificate Courses (NCC)

- NCC in Machining
- NCC in Fitting
- NCC in Automotive Mechanics
- NCC in Electrical Installation in Buildings

- NCC in Radio and Electronic Mechanics
- Basic Electronics
- Plumbing
- Electrical Wiring
- Radio Servicing
- Refrigeration and Air Conditioning
- Tractor Mechanics
- Motor Vehicle Electrical Course
- Welding Practice
- Agriculture and Animal Husbandry
- Textile and Furnishing Manufacture
- NCEC General Machinist

- NCEC Gas and Arc Welder
- NCEC Electrical Wireman
- NCEC Radio, TV, and Electronic Serviceman
- NCEC Wood Machinist

Short Courses (3 months to 1 year)--mainly intended for self-employment

- Wood Carving
- Electrical Wiring
- Radio Servicing
- Welding Practice (Evening)
- Tailoring (Gents)

- Batiks and Textile Printing-One Year
- Artificial Flower and Doll Making

- Motor Cycle and Scooter Maintenance/Repair
- Anthurium and Orchid Culture

- Maintenance and Repair of Motor Vehicles
- Owner Drivers

- Handicraft Course
- Production of Leather Goods
- T.V. Installation
- Dress Making

- Ten weeks Artisan Training Programmes provided for the Institute of Construction Training and Development
- Woodwork

- Masonry
- Electrical Wiring
- Plumbing
- Steel Fixing and Bar/Bending

APPENDIX G

ATI Training Scheme

The ATI at Moratuwa is a Craftsmen Training Institute established especially to meet the demand for highly skilled crafts men for the shop floor in industry, and also to develop self employment entrepreneurial skills among craftsmen.

The ATI conducts 3 year apprenticeship training courses, in selected trades in certain vocational fields. The first Year consists of full time institutional training. During the major part of the second and third years, apprentices are placed in industry for inplant training. Between 8 to 12 weeks in each of the second and third years, apprentices are provided institutional training in ATI to enhance their theoretical knowledge.

The ATI conducts courses in the Construction, Electrical, Electronics, Metal and Woodworking Trades

Training at the ATI emphasizes the development of practical skills and is carried out in modern, well equipped workshops and laboratories. This covers 80% of the training period. The balance deals with trade related theory consisting of Technology, Technical Mathematics and Technical Drawing, taught in classrooms equipped with modern teaching aids

All apprentices of the same Vocational Field are taught a common syllabus during the first year basic training at the ATI. They are then streamed trade-wise, for their second and third years training

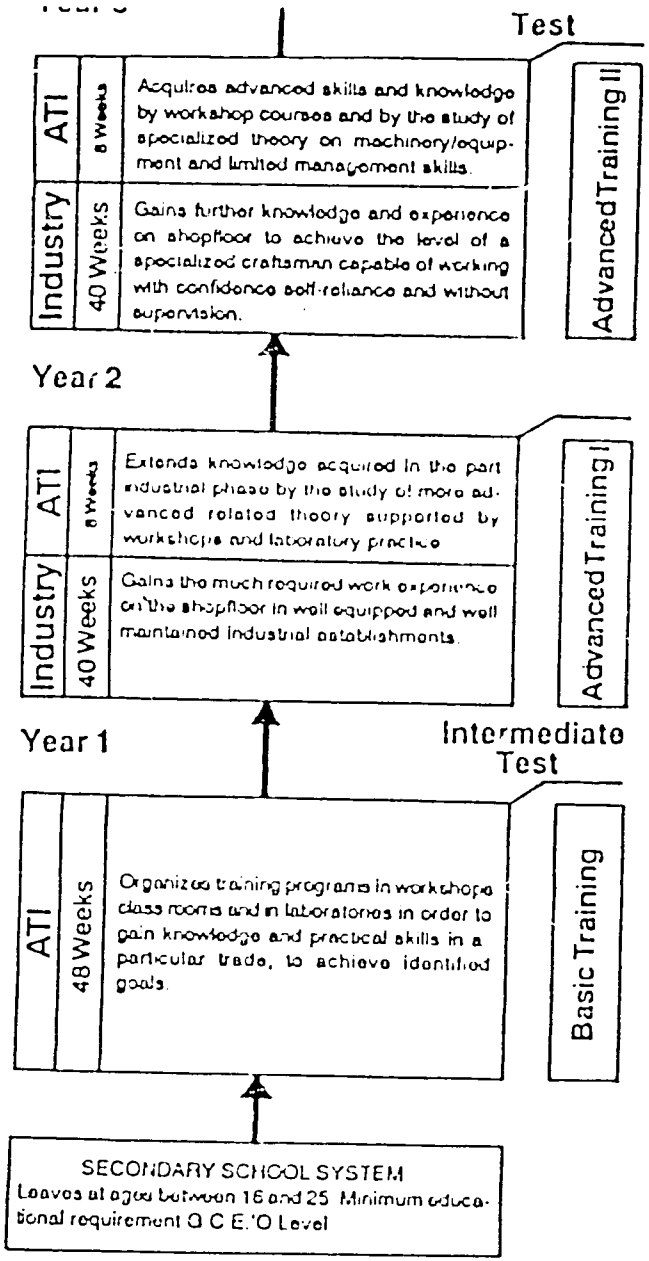
The whole training program consists of 5760 periods over three years. 2560 periods of these are conducted at ATI

These training courses will produce qualified craftsmen, who are able to work in key positions in the relevant trades as highly skilled craftsmen, and after further experience as supervisors or foremen

All apprentices are subject to continuous assessment during the entire training period.

On successful completion of the training course and the final trade test (practical and theory), the "NAB Craft Certificate (Special)" will be awarded.

Source: ATI, 1989



- Construction — Mason (Special)
- Electrical — Electrician (Special)
- Electronics — Electronics Mechanic

CAPACITY

Woodwork	168 Trainees
Metalwork	216 Trainees
Construction	108 Trainees
Electrical	216 Trainees
Electronics	72 Trainees

TR.AREAS

- 26 workshops with modern machinery and facilities
- 10 laboratories with latest equip. for student exercises
- 4 classrooms for theoretical lessons

STAFF

- 50 Instructors + Lecturers
- 30 Adminstr. + Others
- 5 German Advisors

INTAKE

In general half yearly
(1 Jan., 1 July)

ALLOWANCES

- for all registered trainees

1 year	- Rs 450/-
2 year	- Rs 450/-
3 year	- Rs 450/-

APPENDIX H

Number of Establishments Conducting Apprenticeship Training under NAB

Apprenticeship	Year					
	1982	1983	1984	1985	1986	1987
* Craft Apprenticeship	757	712	883	1094	1063	1302
Technician Apprenticeship	54	70	65	76	115	94
** Special Apprenticeship	23	17	16	36	41	45
Job—Bank Apprenticeship	07	02	06	—	—	—
Village-Level Apprenticeship	256	391	360	414	680	619
Engineering Undergraduate Apprenticeship	124	61	83	79	97	198
** Construction Industry Apprenticeship	119	93	63	42	61	67
Grand Total	1340	1346	1476	1738	2057	2325

* Craft Apprenticeship Included Craft Apprenticeship Categorised Trade Programme and Craft Apprenticeship Situational Normal Programme.

** Special Apprenticeship Included Special Apprenticeship Programme and Special Situational Apprenticeship Programme.

** Construction Industry Trades Apprenticeship Included Construction-Supervisor, School Leavers.

Source: Asian Development Bank, 1989.

APPENDIX I

NAB Training Programmes : Trend in Intake and Output
1982-1987

Title of Programme	Duration months	Entry Requirements	1982 Intake	1982 Output	1983 Intake	1983 Output	1984 Intake	1984 Output	1985 Intake	1985 Output	1986 Intake	1986 Output	1987 Intake	1988 Intake
Engineering Undergraduate	6	University Student	1128	917	1350	1138	1138	618	1162	1116	561	741	947	...
Technician Apprenticeship	12	NDT 2 yrs. Theory	377	369	391	354	-	340	341	356	317	295	309	68
Special (TTI) Apprenticeship	48	GCE (O/L)	187	57	159	172	164	120	429	102	256	141	248	243
Special (Situational) Apprenticeship	12-48	GCE (O/L)	36	35	102	11	63	82	119	10	100	54	05	111
Sub-Technician Apprenticeship	12	GCE (O/L)	141	141	269	234	207	233	143	188	225	155	179	152

Contd.

Table A.87 Contd.

Title of Programme	Duration months	Entry Requirement	1982 Intake	1982 Output	1983 Intake	1983 Output	1984 Intake	1984 Output	1985 Intake	1985 Output	1986 Intake	1986 Output	1987 Intake	1988 Intake
Craft Apprenticeship including ATI	6-48	GCE (O/L) 8th Std. 7th Std.	4447	2612	4022	3372	4228	2867	4519	2921	4293	2697	4147	3158
Craft (Situational) Apprenticeship	6-48	8th Std.	567	175	600	391	464	311	603	335	884	259	483	480
Village Level Apprenticeship	12	6th Std.	594	259	721	216	728	767	1067	668	1649	1017	1171	1569
Artisan Apprenticeship	6-12	5th Std.	129	43	22	126	-	..	..	..	..	..	..	..
Total			2616	4598	7666	[illegible]	7102	5338	5383	5096	8505	5359	7489	7781

Source: Asian Development Bank, 1989.

APPENDIX J

Skills Development Programme of the Department of Labour—Progress 1977-1985

Vocation	1977	1978	1979	1980	1981	1982	1983	1984	1985
1. Tailoring (12)	826	2137	2854	3025	3831	3992	4309	4213	4220
2. Carpentry (09)	221	694	692	973	1168	1112	1215	1253	1273
3. Masonry (09)	322	642	941	1217	1122	1355	1404	1031	1331
4. Mat Weaving (06)	—	—	22	45	74	100	88	86	92
5. Industrial Sewing (45 days)	—	—	—	578	1150	1406	1253	1310	1448
6. English Typing (04 months)	—	—	—	—	84	88	80	120	85
7. Self-Managed Women's Farms (12)	—	—	—	—	29	20	24	25	25
8. Motor Mechanism (12)	82	78	76	77	67	150	140	112	144
9. Sheet Metal (12)	28	32	31	32	36	37	85	40	—
10. Mechanism (12)	30	34	32	36	36	53	48	50	57
11. Fitting (12)	70	80	71	67	103	71	76	70	54
12. Tractor Mechanism (12)	45	53	64	65	66	96	100	80	118
13. Electrical Wiring (12)	26	28	21	32	35	38	35	40	48
14. Moulding (12)	—	—	04	12	12	14	13	28	10
15. Pattern Making (12)	—	—	08	08	07	08	—	—	—
16. Radio Technology (12)	09	11	—	17	20	24	08	23	25
17. Mechanical Boat Engines (12)	25	30	30	28	30	30	19	60	27
18. Welding (12)	25	29	31	35	35	57	55	40	73
19. Mechanical Carpentry (12)	—	—	—	—	—	100	88	275	144
20. Construction & Plumbing (12)	—	—	—	—	—	110	100	155	102
21. Air-Conditioning & Refrigeration (12)	—	—	—	—	—	—	—	—	22
Total	1709	3848	4877	6274	7923	8959	9182	9203	9500

Figures within bracket indicate duration of course in months

Source: Asian Development Bank, 1989.

APPENDIX K

Output Trend of Trainees Trained by ICTAD

	1981	1982	1983	1984	1985	1986	1987	Total
Masonry	51	1238	2185	1855	1778	1726	1554	10387
Carpentry	48	1193	2166	1805	1567	1573	1415	9767
Electrical Wiring		298	549	352	365	352	312	2228
Plumbing		74	317	214	209	206	173	1193
Steel Fixing & Bar-Bending		27	81	134	120	150	109	621
Building Maintenance Operators					36			36
Building Maintenance Supervisors					16			16
Supervisors	76	300	365	258	217	267	275	1758
Middle Management Training / Upper Management Training				72	88	45	327	632
Heavy Equipment Operators / Light Equipment Operators		221	333	177	281	273	402	1687
Heavy Equipment Mechanics / Light Equipment Mechanics		73	209	264	292	208	170	1216
Advanced Mechanics								
Training for Highways Sector								
Chief Engineers								
Executive Engineers					628	157	255	1050
Technical Officers								
Road Maintenance Agents								
Work Superintendents								
Skills Training Component								
Million Houses Programme								
Masonry				153	2843	2887	2963	8846
Carpenters				79	3210	2971	3507	9767
Total	175	3424	5205	5363	11650	10925	11462	49104

Source: Asian Development Bank, 1989.

APPENDIX L

Student Admissions to Technical Colleges by Course, 1987/88

Course	Course Level	Dur	FT PT	<------ Total			------>
				Appld	Intwd	Seled	Regd
Accountancy	HND	4	2	1802	1275	741	595
Commerce	HND	4	1	771	518	327	251
Civil Engineering	HND	3	1	0	0	0	34
Mech Engineering	HND	3	1	0	0	0	22
Elect Engineering	HND	3	1	0	0	0	40
Agriculture	ND	3	1	947	125	70	66
Business Studies	ND	2	1	798	458	307	226
Home Economics	ND	2	1	409	90	61	61
English	ND	2	1	266	122	58	56
English	ND	3	2	151	103	60	42
Jewellery Design Manufacture	ND	2	1	53	29	22	15
Preliminary Eng Science	NC	1	2	45	36	19	13
Business Studies	NC	2	2	2199	1252	799	599
Business Studies	NC	2	2	486	409	324	205
Interior & Tax Return Clerks	NC	1	2	80	53	43	23
Stenography	NC	1	1	5647	2455	1347	1168
English Conv/Industry	NC	1	1	1557	936	552	486
English Conv/Industry	NC	2	2	815	755	565	428
Secretarial Practice	NC	1	1	165	115	66	60
Pre-higher National Qualif	NC	2	2	145	134	108	90
Stenography	NC	1	2	682	608	423	346
Civil Eng Technology	NC	3	2	1809	1265	773	678
Mech Eng Technology	NC	3	2	911	703	392	298
Elect & Electro Eng Technology	NC	3	2	1108	798	434	367
Quantity Surveying	NC	3	2	722	518	293	245
Draughtsman Appren	NC	1	1	6096	1629	865	783
Gem Industry	NC	1	2	99	41	21	18
Machine Shop Pract	NCC	2	1	777	436	238	188
Plumbing	NCC	1	2	61	15	9	9
Electrical Wiring	NCC	1	2	392	215	106	87
Radio Servicing	NCC	1	2	134	111	44	38
Machine Shop Prac	NCC	3	2	25	25	12	0
Fitting (General)	NCC	2	1	242	156	114	102
Tractor Mechanics	NCC	1	2	30	29	16	12
Motor Veh Electrician	NCC	1	2	509	168	90	67
Welding Practice	NCC	1	2	50	36	14	11
Automotive Mech	NCC	2	1	814	436	230	177
Automotive Mech.	NCC	2	2	105	35	16	16
Textile & Furnishing MA	NCC	2	1	66	66	29	21
Elect Instal in Build	NCC	2	1	755	381	194	147
Electrical Mechanics	NCC	2	1	276	30	15	15
Woodwork	NCC	2	1	20	20	16	16
Radio & Electro Mech	NCC	2	1	195	97	40	34
Wood Carving	SC	1	2	89	69	31	19
Welding Practice	SC		2	408	235	146	65
Tailoring (Gents)	SC	1	2	182	116	60	45
Machine Embroidery	SC	1	2	18	18	10	10
Motor Cy & Scoot Maint /Rep	SC	1	2	14	10	10	4
Anthurium & Orchid Cul	SC		2	30	20	10	10
Kandyan Arts (Brass/Copper)	SC	1	1	32	12	10	4
Maint & Rep of Motor Vehicles	SC		2	73	16	4	0
Owner Drivers	SC		2	32	20	16	7
Dress Making	SC		2	79	37	27	18
Electrical Wiring	SC	1	2	117	105	67	52
Woodwork	SC		1	0	90	90	90
Electrical Wiring	SC		1	0	120	120	120
Automotive Mechanics	SC		1	0	182	182	182
Machining	SC		1	0	198	198	198
Fitting	SC		1	0	131	131	131
Woodwork	SC		1	0	1643	1643	1643
Building Trade	SC		1	0	1932	1932	1932
Electrical Wiring	SC		1	0	402	402	402
Plumbing	SC		1	0	197	197	197
Steel Fixing & Bar Bending	SC		1	0	145	145	145
Woodwork	SC		1	0	95	95	95
Building Trade	SC		1	0	109	109	109
Electrical Wiring	SC		1	0	24	24	24
Plumbing	SC		1	0	16	16	16
Supervisory Training	SC		1	0	251	251	251
Supervisory Training	SC		1	0	33	33	33
		Total		33502	22972	15867	14015

Note: 1 - denotes full-time Appld - Applied Seled - Selected
2 - denotes part-time Intwd - Interviewed Regd - Registered

Source: Asian Development Bank, 1989.

APPENDIX M

Projections: Selected Principal Occupations, 1983-1991

Occupation	Total No. 1982	Additional Demand									Total No. 1983-1991
		1983	1984	1985	1986	1987	1988	1989	1990	1991	
Book-keepers	10300	500	550	550	550	600	600	600	650	650	5250
Stenographers	9420	1050	1050	1100	1150	1000	1000	1000	1050	1050	9450
Typists	12400	1050	1100	1150	1200	1000	1000	1000	1000	1000	9500
Masons	17500	3000	3000	3250	3250	3000	3000	3250	3250	3250	28250
Carpenters	15500	2700	2700	2800	2900	2400	2500	2600	2700	2700	24000
Plumbers	1000	140	140	150	150	150	150	175	175	175	1405
Welders	6700	450	450	450	450	450	475	475	475	475	4150
Blacksmiths	6600	275	275	275	275	200	200	200	200	200	2100
Electrical Wiremen	4400	475	475	500	500	400	400	400	450	450	4050
Motor Mechanics/ Repairmen	40800	2100	2100	2100	2100	1900	1900	1900	1600	1600	17300
Heavy Vehicle Drivers	3150	400	400	400	350	350	350	400	400	450	3500

Source: Manpower Data Sources: Utilization Trends and Prospects in Sri Lanka (Employment and Manpower Planning Division of Ministry of Plan Implementation)

APPENDIX N

Projections of Manpower Neeeds by Ministry of Local Government Housing and Construction

No.	Skill Category	Total				
		1986	1987	1988	1989	1990
1.	Tech. Planning & Mgt	1081	1127	1204	1282	1358
2.	Site Supervisor	3698	3800	4108	4346	4555
3.	Heavy Plant & Equip.	2308	2142	2266	2385	2496
4.	Light Plant & Vehicles	6025	6549	6959	7493	7801
5.	Heavy Equipment Mech.	1434	1300	1460	1526	1587
6.	Light Equipment Mech.	1576	1711	1825	1938	2035
7.	Mason/Bricklayer	43807	45517	47013	48473	49931
8.	Mason/Special Finish	955	989	1018	1033	1068
9.	Carpenter/Shutterer	34831	35898	36924	37979	38986
10.	Bar-bender/Steel Fixer	3462	3728	3918	4101	4279
11.	Scaffolder	1120	1194	1248	1300	1327
12.	Plumber	3889	4237	4563	4852	5090
13.	Electrical Wirer	3819	3903	3994	4067	4121
		108005	112285	116500	120698	124640

Source: Asian Development Bank, 1989.

APPENDIX O

A total of 50 companies were surveyed and in the case of a majority of the questions, responses were received from all fifty. In some situations a question was not asked or was inapplicable. The number of responses used in determining percentages providing different answers is given alongside each question.

1. From the following list, select the most important activity area in which your firm is engaged. [No of Respondents: 50]

	% of Respondents		% of Respondents
Ceramic products	4.00	Marine products	4.00
Chemicals	6.00	Minerals	2.00
Coconut products	2.00	Motor garage	4.00
Communications	4.00	Packaging	6.00
Food & beverages	2.00	Printing	4.00
Garments/Textiles	4.00	Rubber products	4.00
Gems & Jewellery	4.00	Spices	2.00
Hotel/Tourism	8.00	Wood products	4.00
Leather products	4.00	Other	20.00
Light engineering products	12.00		

2. How long has your firm been in business? [No of Respondents: 50]

	% of Respondents
Less than one year	0
Between 1 and 2 years	4.00
Between 2 and 5 years	8.00
Between 5 and 10 year	34.00
Over 10 years	54.00

3. How many workers are employed by your firm? [No of Respondents: 50]

	% of Respondents
Less than 10	2.00
10 to 20	2.00
20 to 50	26.00
Over 50	70.00

3.1 Percentage of women workers? [No of Respondents: 45]

	% of Respondents
Less than 10	57.78
10 to 20	8.89
20 to 50	8.89
Over 50	24.44

4. How has the number of workers you employ changed in the last year? [No of Respondents: 50]

	% of Respondents
Increased	46.00
Decreased	24.00
Stayed approx the same	30.00

5. What percentage of your employees fall within the following labour categories?

	% of Respondents			
	<10%	10-50%	>50%	No of Respondents
Managers/Administrators	86.00	14.00	0	50
Technicians	20.00	44.00	36.00	50
Semi-skilled workers	21.28	57.45	21.28	47
Unskilled workers	58.70	30.43	10.87	46

6. What was your capacity utilization during the last year? [No of Respondents: 50]

	% of Respondents
>90%	28.00
80-90%	16.00
<80%	52.00
Not applicable	4.00

7. How important are the following factors in determining the profitability of your company?

	% of Respondents			
Market Demand	Very Important	Important	Not so Important	No of Respondents
7.1 Local market demand	62.00	8.00	30.00	50
7.2 Regional market demand	10.00	14.00	76.00	50
7.3 Mkt demand outside region	40.00	10.00	50.00	50
Costs				
7.4 Material, equipment and supply cost	90.00	6.00	4.00	50
7.5 Wage costs	34.00	36.00	30.00	50
7.6 Other labour costs	0	12.00	88.00	50
7.7 Energy costs	30.00	36.00	34.00	50
7.8 Subcontract costs	6.00	10.00	84.00	50
7.9 Taxes, special fees to the Government (e.g Customs fees)	38.00	24.00	38.00	50
7.10 Rent	4.00	20.00	76.00	50
7.11 Interest payments	56.00	22.00	22.00	50
7.12 Transportation costs	10.00	34.00	56.00	50
7.13 Other costs	12.00	16.00	0	50
Government Regulations				
7.14 Import licenses	11.11	15.56	73.33	45
7.15 Export licenses	0	13.64	86.36	44
7.16 Labour regulations	10.00	36.00	54.00	50
7.17 Customs clearance procedures	20.45	38.64	40.91	44
7.18 Other regulations	20.00	2.00	2.00	50
Skills of Workforce (Either Quality or Quantity Related)				
7.19 General problems (motivation, attitude, aver. productivity)	50.00	38.00	12.00	50
7.20 Specific (difficulty in finding specific skills at prevailing wage rate)	36.00	22.00	42.00	50
7.21 Management skills shortage	22.00	24.00	54.00	50
7.22 Supervisory skills shortage	22.00	30.00	48.00	50
Other				
7.23 Availability of credit	30.00	24.00	46.00	50
7.24 Distance to markets	12.00	16.00	72.00	50
7.25 Communications	28.00	26.00	46.00	50
7.26 Identifying and gaining access to markets	20.00	36.00	44.00	50
7.27 Competition from abroad	30.43	30.43	39.13	46
7.28 Lack of appropriate technology	10.42	10.42	79.17	48
7.29 Other factors	8.00	6.00	0	50

8. Of the factors in question 7, which two do you consider the most important in determining your firms profitability? [No of Respondents: 50]

The percentages below are calculated by first summing the number of times a particular factor was listed and then dividing the number by the sum total of all responses, which in this case is 100.

	% of Respondents
Material, equipment and supply cost	30.00
Interest payments	11.00
Local market demand	7.00
Wage costs	6.00
Taxes, special fees to the Government (e.g. Customs fees)	6.00
Specific (difficulty in finding specific skills at prevailing wage rate)	6.00
Mkt demand outside region	5.00
Other regulations	5.00
Availability of credit	4.00

	% of Respondents
General problems (motivation, attitude, aver. productivity)	3.00
Identifying and gaining access to markets	3.00
Competition from abroad	3.00
Energy costs	2.00
Transportation costs	2.00
Other costs	2.00
Customs clearance procedures	2.00
Management skills shortage	2.00
Other factors	1.00

9. How problematic were the following factors in the setting up of your firms? [No of respondents: 44]

	% of Respondents		
	Very Problematic	Somewhat Problematic	Not a Problem
Licensing	13.64	9.09	77.27
Size of capital investment	20.45	27.27	52.27
Availability of credit	22.73	22.73	54.55
Availability of qualified employees	20.45	29.55	50.00
Availability of management	13.64	22.73	63.64
Competition	9.09	29.55	61.36
Others	4.55	9.09	6.82

10. Do you export any of your output or services? [No of Respondents: 50]

	% of Respondents
Yes	60.00
No	40.00

11. If no to question 10, do you intend to in the future? [No of respondents: 20]

	% of Respondents
Yes	45.00
No	55.00

12. Do you use (or would you use) the following mechanisms to recruit workers? [No of respondents: 50]

	% of Respondents	
	Yes	No
Advertise in newspapers, radio, TV	68.00	32.00
Ask employees for suggestions	74.00	26.00
Recruit from other firms in the industry	28.00	72.00
Check with labour offices	6.00	94.00
Contact professional associations	14.00	86.00
Get lists of graduates from vocational institutes, universities	26.00	74.00
Use recruitment agencies	8.00	92.00
Ask friends, family	38.00	62.00
Other (specify)	44.00	14.00

13. Do you prefer to hire already trained workers or to provide the training yourself for the following categories of employees? [No of respondents: 50]

	% of Respondents		
	Already Trained	Prefer to Train	Not Applicable
Production labour	28.00	62.00	10
Service workers	46.00	40.00	14.00
Technical workers	46.00	44.00	10
Supervisors	36.00	60.00	4.00
Junior managers	38.00	50.00	12.00
Middle managers	42.00	46.00	12.00

14. Do you have any sort of skills test for job applicants? [No of respondents: 50]

	% of Respondents
Yes, most of the time	62.00
No, never	14.00
Depends	24.00

15. Do you have problems with finding persons with the following specific skills?

	% of Respondents		
	Yes	No	No of Respondents
Specific technical skills	70.00	30.00	50
Service skills (cashiers, etc.)	20.00	80.00	50
Professional skills	42.22	57.78	45
Management/supervisory skills	47.92	52.08	48

16. Do you provide special training for your employees which is not part of the regular job? [No of respondents: 50]

	% of Respondents
Yes	78.00
No	22.00

17. Do you use outside resources (instruction, facilities) to train your employees? [No of respondents: 50]

	% of Respondents
Yes	48.00
No	52.00

18. What percentage of your technically skilled workers have received formal vocational training? [No of respondents: 50]

	% of Respondents
<5%	38.00
5-10%	20.00
10-25%	12.00
25-50%	8.00
>50%	22.00

19. Do you participate in an apprenticeship programme? [No of respondents: 50]

	% of Respondents
Yes	30.00
No	70.00

20. How do your employees with vocational training compare with other workers in the same area? [No of Respondents: 48]

	% of Respondents
Much better	27.08
Worse	29.17
Better	2.08
No answer	6.25
No difference	35.42

21. How would you rate existing vocational training programmes that you are aware of? [No of Respondents: 50]

	% of Respondents
Not aware of any programmes	26.00
Rather good	36.00
Average	22.00
Don't seem to matter much	16.00

22. Some employers note some particular problems with the quality of their workers or with the kinds of training programmes offered in the country. I am going to list a number of observations relating to your employees. Please indicate whether you agree (A), disagree (D) or have no strong feelings (N) about each statement. [No of Respondents: 50]

		% of Respondents		
		A	D	N
22.1	My employees require too much supervision	58.00	36.00	6.00
22.2	I have had to redesign jobs to fit limited worker skills.	30.00	70.00	0
22.3	My workers know how to do their jobs, but they don't always do their jobs well.	62.00	30.00	8.00
22.4	My workers are good. My business problems come from other sources.	56.00	18.00	26.00
22.5	When hiring a new employee I don't really want a worker who is already trained. Just give me someone who is motivated and disciplined and I'll teach him what I want him to know.	66.00	26.00	8.00
22.6	In house training is costly. I prefer to hire people trained in outside institutions.	16.00	62.00	22.00
22.7	If I could find better workers I could expand my business.	33.00	58.00	12.00
22.8	There are plenty of good workers available.	50.00	44.00	6.00
22.9	I am hesitant to give my workers too much training because they may get hired away by another firm or migrate to another country.	16.00	82.00	2.00
22.10	I could get by with fewer workers if they were better workers.	36.00	56.00	8.00

23. What recommendations do you have for improving vocational training programmes in the country?

		% of Respondents		
		Yes	No	No of Respondents
23.1	Have not really thought of problem.	54.00	46.00	50
23.2	Need more practical experience, less theory	94.74	5.26	38
23.3	Need to teach students better discipline	90.63	9.38	32
23.4	Need to teach students to be more interested in the quality of their work	100	0	36
23.5	Need to teach multiple skills for worker flexibility	84.62	15.38	39
23.6	Need to teach with machinery and equipment of the type used in industry	81.08	18.92	37
23.7	Change curriculum to better reflect required job skills	84.62	15.38	26
23.8	Teach better attitudes	91.18	8.82	34
23.9	Teach improved safety awareness	91.89	8.11	37
23.10	Need instructors with better experience in industry	82.35	17.65	34
23.11	Schools need to have more contacts with employers	85.49	13.51	37
23.12	Students should take certified examinations so that their skills can be judged better	80.00	20.00	40
23.13	Other recommendations	38.00	62.00	40