

**Trends in Pakistan's Labor  
Market and Their  
Implications for the Design of DSTP II**

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## EXECUTIVE SUMMARY

This paper presents a summary and analysis of labor market conditions which are expected to prevail in Pakistan in the near future, and assesses the mix of training proposed under DSTP II in light of this analysis.

The principal findings of this paper are as follows:

1. Over the five years of the Seventh Plan (1988-93), relatively small increases in the demand for labor with higher educational qualifications are predicted. A greater surplus of available labor is expected for the intermediate and degree level categories than for lower educational levels. However, projections for the perspective plan period (1988-2003), which allow for change in the structure of the existing stock of labor, show a shortage of post graduates. In addition, a general upgrading of the educational qualifications for most occupational groups will be necessary if the expected excess supply of labor with lower levels of education (secondary, intermediate, or degree holders) is to be relieved.
2. Sectoral labor requirements over the perspective plan (1988-2003) are predicted to increase fastest in mining (annual growth of 7.4%), followed by electricity and gas (annual growth of 5.4%), construction (annual growth of 4.2%), the public administration/defense sector (annual growth of 3.6%), and services (annual growth of 3.0%).
3. Projections of labor mismatches over the Perspective Plan period show a shortage for agricultural workers. For the remaining occupational groups, a surplus is projected. The highest annual growth rate of surplus labor is observed for sales workers (15%), followed by professional (11%) and clerical workers (8%). The surplus of production workers grows at the lowest rate of (3% per annum).

4. Projections of labor demand and supply at a more disaggregated level indicate shortages for the middle level technologists (main areas: medical, laboratory technicians, nurses, draftsmen, junior executives, librarians, and production supervisors) as well as for various types of engineers and accountants. This is not surprising given: a) the public sector's emphasis under the Seventh Plan on increased delivery of social services, particularly education and health, and b) the projected increases in labor demand for the mining, electricity/gas, and construction sectors.
  
5. The low rate of employment absorption by large scale industry has directed attention to small scale industry over the Seventh and perspective plan periods. The National Manpower Commission's (NMC) report (Committee on Skill Development and Productive Employment in the Manufacturing Sector) identifies small scale industry and construction as the leading sectors for employment generation. This is because of their higher employment elasticities and strong backward and forward linkages with other sectors of the economy. These two sectors are expected to complement each other since better infrastructure facilities will induce higher growth, specially of small scale rural industries, and will also generate largely self-financed private investment. To increase the relatively low productivity of small scale industries, it is necessary to invest in programs for skill training and business management (even at elementary levels). Management courses could encourage the development of a new entrepreneurial class, particularly among workers returning from overseas. Such workers presumably have adequate financial means and technical skills, but may lack business and management know how.
  
6. The recent increase in agricultural wages, which induced greater participation by women in the market for wage labor, is not expected to continue. It will, therefore, be necessary to create employment opportunities for women in rural areas outside the agriculture sector. Even in urban areas, increased female labor force participation in the formal sector should be encouraged. Business management and entrepreneurial skill development should be initiated.

The additional female teachers required for planned expansion of the educational sector during the Seventh Plan is 86,725. Both the number of institutions training female teachers (only 30 for the entire country) and their enrollment capacity are insufficient compared to the existing needs and the Seventh Plan target.

The survey carried out by the National Manpower Commission predicts shortages for paramedical staff. There is already a great shortage of nurses as evidenced by the existing ratio of nurses to doctors, 1:4.

7. Much of the growth in demand for health and educational workers will occur in rural areas. Not only will such workers have to be trained, but they will also have to be motivated to accept jobs in such remote locations. Current unemployment of doctors in Pakistan occurs not because of job saturation, but rather because of the fact that most doctors want to stay in urban areas, where only 30% of the total population lives. As it stands now, the allocation of development funds under the Seventh Plan is biased towards urban areas. For every Rs.10 spent in urban areas, only Rs.2 are spent in rural areas. This only encourages rural/urban migration and worsens the already critical situation concerning unemployment in urban areas.
8. DSTP II responds to the increased public sector demand for workers in social services by allocating 40% of the annual participant training openings to health and education. DSTP II will also allocate an increasing share of total training opportunities to the private sector, with this share growing from about 30% at present to about 60% by 1997.
9. DSTP II will increase its support for small scale entrepreneurs/enterprises (with an expanded focus on private sector financing organizations) through the Private Enterprise Training Initiative. This has become the fastest growing component of the in-country training program.

10. Elements of DSTP II should be designed with the needs of rural areas in mind. Participants should be selected, and incentives offered, so as to ensure as best as possible that the skills required in rural areas are ultimately available.
11. With an increasing number of training opportunities going to the private sector under DSTP II, it would be desirable to see an increase in women participants. Under DSTP I, the share of overseas training that went to women was 14% (based on all processed cases for which a PIO/P was issued and excluding cancellations). Approximately half of those participating in overseas training came from the private sector.
12. Given Pakistan's labor force needs and the increased focus of the Mission and DSTP II on the private sector, it would be desirable to reduce under DSTP II the number of overseas training opportunities described as study tours, workshop, etc. (about 28% of the total processed cases under DSTP I). These have been provided primarily to public sector employees; and, they appear unlikely to address Pakistan's most immediate and pressing labor force needs.

#### I. Introduction

Pakistan can not afford to waste or underutilize valuable human resources. Its future economic development will be hampered unless Pakistan develops the capacity to create employment opportunities and to mobilize, train, and educate its human resources to meet these opportunities.

The Government of Pakistan (GOP) is presently focusing attention on the unemployment issue as a crucial economic as well as political problem

requiring immediate action.<sup>1/</sup> At the same time, the government recognizes the need to evolve a comprehensive program for human resource development that will respond to the country's longer term goals. Some of the objectives of the Seventh Plan reflect this strategy: the allocation of increased resources to primary education, the expansion of technical and vocational training programs, measures to improve the quality rather than increase enrollments in secondary and university education, increased investment in science and technology, and efforts to integrate research carried out in universities with national development plans.

The Development Support Training Program (DSTP) will make a positive contribution to this general effort as long as the training opportunities provided respond to anticipated manpower requirements. Thus the purpose of this analysis is to evaluate DSTP II goals in the light of projected labor demand and anticipated mismatches between labor supply and demand for various occupational categories.

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<sup>1/</sup> Following the Prime Minister's request, the National Manpower Commission was convened in August, 1987 to examine the manpower situation in the country, project manpower supply and demand for the next fifteen years, suggest measures for bringing about a better balance between supply and demand for various categories of manpower, and prepare a strategy for human resource development. The final report prepared by NMC will be available to the public in April 1990. Preliminary results are discussed in Section II.

## II. Expected Manpower Needs

### A. Date Sources

The discussion of expected manpower requirements for the Pakistan economy presented below is based on three independent sources:

(a) The National Manpower Commission (NMC), "An Agenda for Human Resource Development Policy and Employment in Pakistan, "Preliminary results of a NMC/UNDP field Study, October, 1989,

(b) The Pakistan/Netherlands Project on human resources, "Projections of Manpower Requirements and Supply for the Seventh Plan and for the Perspective Plan (1988-2003)", April 1989, and

(c) The World Bank, "Pakistan Employment Issues and Prospects," April 1989.

The NMC was set up in late 1987 in order to examine the manpower situation in the country and prepare a comprehensive human resource development strategy for the Seventh and the Perspective Plans. A number of NMC committees were also set up to look into specialized areas in more detail. The findings of these efforts have been published and some of the issues raised are discussed below, e.g. women's employment and training, the unemployment of educated youth in urban areas, skill development for productive employment in the manufacturing sector, and manpower needs in science and technology. Furthermore, in October-November 1989 a stratified nationwide sample survey was carried out by the NMC to examine the labor market and project labor market imbalances. Preliminary results are discussed below.1/

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1/ The final report will be available in April 1990.

## B. Labor Market Analysis

The NMC recognized that growth in employment would have to come largely from the private sector, specifically self-employment in small business and enterprises. The public sector is already a major employer accounting for about half of all wage employment. Projections show that employment in the public sector is expected to grow at just 2 to 3 per cent per annum over the Seventh Plan period. The only major area where large public sector employment increases are expected is social services, primarily education and health.

To meet Seventh Plan targets, the underutilized pool of the female population will have to be encouraged to become economically active. The additional female teachers required for expansion during the Seventh Plan will be 86,725. However, with only 30 teacher training institutes for women for the entire country, it will be beyond the country's capability to train all the women teachers targeted for the Seventh Plan.<sup>1/</sup>

After education, health is the most important sector as far as women's training and employment is concerned. Due to the social structure in Pakistan, it is essential to have women doctors, nurses and paramedical staff. Particularly in rural areas where doctors are not available, women health visitors are a must. Yet the ratio of doctors to nurses in Pakistan is 4:1. Both the number of institutions providing training for medical staff and their enrollment capacity are insufficient compared to the existing needs and the Seventh Plan target.

Employment and training of women should not be offered, however, only in areas where the government needs women workers, i.e. health and education. Demographic changes have already increased the labor market participation by women from 2% of the eligible population in 1975 to 4% in 1987. It will therefore be increasingly important to offer women equal opportunities for education in general, as well as training in modern agriculture methods, traditional crafts, business

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<sup>1/</sup> "Women Employment and Training", Committee #8, Government of Pakistan, National Manpower Commission, 1989.

entrepreneurship, and new technologies. Furthermore, the government should require that women working in the manufacturing sector are offered apprenticeship programs like the ones presently existing only for men.

The NMC identified small scale industry and construction as the leading sectors for employment generation.1/ This is because of their higher employment elasticities and strong backward and forward linkage with other sectors of the economy. Employment growth in the small scale sector was over 8% per annum between 1976/77 and 1983/84. This is mainly the result of the rapid growth of this sector, the competitive labor market that prevails in the sector, and the existence of complementarities with large scale manufacturing.2/ The role of small scale industry in output growth and employment depends, however, on how rapidly constraints on literacy, basic education, and level of skills for the manpower in this sector can be overcome.

Projections prepared by the NMC show that, given present trends, the number of scientists and technologists available in the year 2000 will be 522,000, while the number recommended according to UNESCO guidelines, which determine manpower requirements needed to ensure adequate scientific and technological progress, is 1,396,000. Thus the anticipated shortfall in the number of scientists/technologists is 874,000. Moreover the falling standards in educational institutions at all levels, particularly those relating to science and technology, also have to be addressed if Pakistan is to avoid the creation of a pool of unemployable degree holders.3/

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1/ "Skill Development and Productive Employment in the Manufacturing Sector", Committee #1, GOP, National Manpower Commission, 1989.

2/ "Pakistan Employment Issues and Prospects", World Bank, 1989.

3/ "Meeting Pakistan Manpower's needs in Science and Technology for the Twentieth and Twenty First Centuries", GOP, National Manpower Commission, 1989.

Preliminary results of the survey launched by the NMC/UNDP show major shortages at the middle level technologists and for skilled production workers. Some of the occupations identified are: Medical and laboratory technicians, nurses, paramedical staff, designers, junior executives, general foremen for fabricated metals, food products, chemicals, carpet weavers, sewing machine operators and production supervisors.1/

In the context of the Employment, Income and Basic Needs Pakistan/Netherland Project, an analysis of manpower requirements for some 100 occupations, disaggregated by 5 educational levels was developed. The main economic assumptions incorporated in the analysis are the following: On the supply side, a constant crude labor force participation rate of 29.4% (observed in 1986/87) and a population growth of 3% per annum are assumed to hold over the entire Seventh Plan period. On the demand side, a GDP growth rate of 6.5% and a 0.41% elasticity of employment with respect to the total GDP are assumed over the Plan period.2/

In general, labor requirements over the Seventh Plan period are predicted to increase slowest in the financial sector. Fastest increases will be in the mining, and electricity/gas sectors, followed by the construction and public administration/defense sectors. The annual growth rate of labor requirements is projected to be 7.4% for mining, 5.4% for electricity/gas, 4.2% for construction, 3.6% for public administration, and 3% for services.

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1/ For a complete list of the occupations for which shortages or surpluses were indicated based on the findings of the NMC/UNDP Survey, see Appendix 1.

2/ Due to the small number of labor market surveys in the 1980's and labor force data limitations, the method of projection used ensured that manpower requirements coefficients by sector remained within a 40 percent range of the labor force growth trends of 3 percent per annum. For the perspective plan, a coefficient matrix was computed using a 100 percent range limit on either side of the 3 percent growth rate of the labor force.

Projections by occupational group show that labor requirements for administration and production workers will increase more rapidly than for agricultural and sales workers.

Manpower imbalances by level of education over the Seventh Plan period indicate a higher imbalance rate (excess supply) for the intermediate and degree level than for lower education levels. In the Perspective Plan period, postgraduates display a shift from a surplus to a shortage (labor demand for post graduates growing at a rate of 5% per annum while supply is expected to grow by 3.6% per year.)

The projected imbalance rates by occupation show a gradual depletion of the excess supply of agricultural and production workers and a small negative balance (excess demand) for service workers. These trends are counter-balanced by positive imbalance rates in the other sectors of the economy to produce the overall excess supply of 1.3 million workers. Higher imbalance growth rates over the Seventh Plan period are observed for clerical workers (29%) and professionals (24%).

Over the Perspective Plan period, imbalances of service workers shift from a shortage to a surplus. The opposite applies for agricultural workers. For the remaining occupational groups, the highest imbalance growth rate is observed for sales workers (15% p.a.), followed by professional (11% p.a.) and clerical workers (8% p.a.). The surplus of production workers grows at the lowest rate (3% p.a.).

Finally, results at a more disaggregated level indicate that the labor requirements for several professions that are spread economy wide, e.g. civil, mechanical and electrical engineers, draftsmen, various technicians and accountants, show greater additional labor requirements than occupations which are more sector specific.

Appendix 1

Findings of a NMC/UNDP/Planning Commission  
Study      Field Survey Oct/Nov 1989

Major shortages were indicated for:

Mechanical engineers	Medical technologists
Laboratory technicians	Nurses
X-ray operators	Wardboys/Hospital servants
Library attendants	Designers
Librarians	Junior executives
Production superintendent	Stenotypists/stenographers
Typists	Telephone Switchboard operators
Production supervisors	General foremen
Carpet weavers and reachers	Knitters, dyers and cotton selectors
Silkmen	Sewing machine operators
Chicken cutters/preparers	Sole pressmen
Laster, and Sewer of leather	Leveling machine operator
Leather mechanists	Cabinet makers
Wood coasters	Lathe setter
Metal polishers	Rubber moulding operators
Compression moulding operators	Compression moulding operators
Long distance heavy vehicle drivers	

Major surpluses were indicated for:

Procurement officers	Program producers
Bus conductors	Light vehicle drivers
Messengers	Log sawers
Hammermen	

### III. The Focus of DSTP II

#### (a) Expected Changes Compared to DSTP I

DSTP II will continue to provide in-country and overseas training opportunities to the public and private sectors of Pakistan. However, a more focussed approach will be adopted. The main changes expected to take place are:

- o DSTP II will increase training opportunities in health and education. About 40% of the openings for academic and technical training will be allocated to these areas. During DSTP I, in contrast, the primary focus was on management courses (about 25% of the overseas training) while overseas training in health and education accounted for about 4% (Table 1).<sup>1/</sup>
- o DSTP II will continue to provide training opportunities in management, but the courses will be less general and more focussed on the requirements identified through training needs assessments.
- o DSTP II will allocate an increasing percentage of training opportunities to the private sector. During DSTP I, overseas training was provided primarily to the public sector (about 78%). This resulted in a high percentage of overseas training (28%) which consisted of study tours, participation in workshops, and conferences. Similarly, about 9% of training opportunities were allocated to courses that were public sector related (e.g. tax fraud, income tax administration, management of government organizations, management of public finance, and census training).

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<sup>1/</sup> These percentages are based on the total number of processed cases excluding cancellations (about 2100).

- o Based on the findings of a needs assessment for the private sector, DSTP II will support basic in-country management and technical skills development for small scale entrepreneurs/enterprises through the Private Enterprise Training Initiative (PETI).

(b) Relevance of DSTP II Objectives to Pakistan's Manpower Needs

Pakistan's principal manpower needs over the Seventh and Perspective Plans will be for middle level technologists (e.g. paramedical staff, nurses, librarians, teachers, draftsmen, junior executives) skilled production workers, and mechanical and electrical engineers. A shortage is projected for post graduates over the Perspective Plan; and, there is a need for basic management and business skills training to increase the productivity of small scale industry. The latter is also needed to facilitate the development in rural areas of non-agricultural employment opportunities.

The DSTP II will support the projected manpower needs in health and education by allocating a higher percentage of training opportunities to these two sectors. However, there is a policy issue that has to be addressed by the GOP. The demand for these skills is primarily in rural areas. The GOP will need to initiate a comprehensive package of incentives to attract young people to work in rural areas. DSTP II should encourage the allocation of training opportunities in health and

education to participants from rural areas.<sup>1/</sup>

By increasing the percentage of training opportunities allocated to the private sector, DSTP II will hopefully respond to the need for: (i) productive employment opportunities being generated in the private sector, and (ii) an increase in formal sector participation rates of women. Socio-economic changes are causing more women to enter the labor market, with women's labor force participation in the rural agricultural sector rising from 39% in 1972 to 54% in 1980.<sup>2/</sup> For women to be able to compete successfully in the labor market, however, appropriate training opportunities will have to be provided, based on needs assessment and compatible with social and cultural norms (particularly those in rural areas).

The decline of employment generation in large scale industry, despite its growth, has refocused the attention of the GOP on small scale industry, which has a high potential for employment generation. To increase the productivity of this sector and encourage the adoption of new technologies, there is a need to invest in training programs in business management (at elementary levels) and entrepreneurial skill development. The DSTP II, through its PETI in-country training, will help increase the country's capabilities in this area. It will also be desirable under the DSTP II to increase both training opportunities provided in science and technology fields and the percentage of post-graduate training. With the decrease in training going to the public sector, perhaps resources used previously for study tours/participation in conferences etc. can be utilized instead for training in science and technology.

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<sup>1/</sup> In the long run, however, there is little the program can do to prevent trainees from migrating to urban areas.

<sup>2/</sup> This is based on the results of the 1972 and 1980 Agricultural Censuses. The participation rates are high relative to the female labour force participation rates reported in the population census and labor force surveys. The latter show implausibly low participation rates for women and a declining labor force participation rate overall. Deficiencies in labor statistics (reported in LFS) result in the exclusion of a large number of persons (estimated about 3.3 million) and the under estimation of labor underutilization (about 12.2 million). Source: World Bank "Pakistan Employment Issues and Prospects".

**Table 1**  
**Overseas Training - DSTP I 1/**

Field of Study	Private		Sex		Total	
	Public	Private	F	M	Number	%
Professional	22	6	3	25	28	1.3
Advance Management	71	12	6	77	83	3.9
Business	229	230	109	350	459	21.6
Engineering	13	8	1	20	21	1.0
Education	25	35	17	43	60	2.8
Health	9	13	4	18	22	1.0
Physical Sciences	8	7	1	14	15	0.7
Social Sciences	352	117	52	417	469	22.1
Public Sector Related	197	5	13	189	202	9.5
Agriculture	15	7	2	20	22	1.0
Project Analysis & Implementation	87	12	8	91	99	4.7
Study tours/Symposiums/ Workshops	595	5	68	532	600	28.2
<b>Total</b>	<b>1623</b>	<b>457</b>	<b>284</b>	<b>1796</b>	<b>2080</b>	
Not Identified					44	2.1
<b>Total</b>					<b>2124</b>	<b>100.0</b>

1/ Based on all processed cases excluding cancellations for which a PIOP/P has been issued.