BIBLIOGRAPHIC DATA SHEET	1. CONTROL NUMBER	2. SUBJECT CLASSIFICATION (695)
	PN-AAJ-107	SE00-0000-G302

3. TITLE AND SUBTITLE (240)

International migration within Latin America and the Caribbean: a review of available evidence

4. PERSONAL AUTHORS (100)

Diaz-Briquets, Sergio

5. CORPORATE AUTHORS (101)

Population Reference Bureau, Inc.

6. DOCUMENT DATE (110)	7. NUMBER OF PAGES (120)	8. ARC NUMBER (170)
1980	130p.	LAT301.328.D542

9. REFERENCE ORGANIZATION (130)

Pop. Ref.

10. SUPPLEMENTARY NOTES (500)

11. ABSTRACT (950)

12. DESCRIPTORS (920)

Migrations
Socioeconomic indicators
Policies
Latin America
Population migrations
Population growth
Labor migration
Caribbean

13. PROJECT NUMBER (150)

14. CONTRACT NO.(140)

AID/lac-C-1349

15. CONTRACT TYPE (140)

16. TYPE OF DOCUMENT (160)

INTERNATIONAL MIGRATION WITHIN LATIN AMERICA AND THE CARIBBEAN: A REVIEW OF AVAILABLE EVIDENCE

Sergio Diaz-Briquets
April, 1980
Population Reference Bureau, Inc.

ACKNOWLEDGEMENTS

I am indebted to many colleagues in and outside Latin America for sharing with me their insights regarding the topics analyzed in this report, providing relevant literature, and guiding me to knowledgeable government officials and policy makers. Laura Lippman, Lisa C. Olson, and Virginia Schofield worked closely with me in the preparation of this report. Robert Corno and John J. Macisco read an earlier version of this document and provided useful comments and suggestions. This report was prepared under a contract with the Population Division of the Latin American and Caribbean Bureau of the United States Agency for International Development (AID/LAC-C-1349). All interpretations are my sole responsibility.

TABLE OF CONTENTS

INTRODUCTION

Throughout the world international migration has been attracting increasing attention from governments, international agencies, researchers and the general public. Since the end of the Second World War a number of forces have contributed to intensify population movements across national borders. Among these have been a virtual "reduction" of distances among countries that has resulted from improvements in transportation and communications, growing wealth differentials between nations, and a higher degree of economic interdependence among peoples. The end of colonialism, the economic resurgence of industrialized Europe, and more recently, the economic boom experienced by the Middle Eastern oil producing states are specific events commonly cited to explain the heightened incidence of the phenomenon in certain regions of Africa, Asia, and Europe.

The character of international migration has also changed in the Western Hemisphere. While the massive waves of immigration -- free or forced-- into the hemisphere are a thing of the past, some international migrants from other continents, though in much smaller numbers, continue to arrive in the Americas. The destination of these migrants is largely limited to a few countries -- Brazil, Canada, United States, and Venezuela -- although most countries receive at least a trickle of arrivals. International migrations within the hemisphere, however, now

appear to be more significant than ever before. Large numbers of migrants from the less developed nations of the Caribbean and Middle and South America find their way to the United States and Canada. Population transfers across other American nations (the Latin and other Caribbean basin countries) are known to occur. Some of these migrations have been taking place for decades while others have just become important in recent years.

This report reviews some of the available evidence related to international migration within the Latin American region. For the purposes of this report, Latin America is defined as the countries included in Middle America (the countries in Central America plus Mexico), the Caribbean (excluding Puerto Rico), and South America. Not included in the report are discussions of the significant population flows from Latin America to Canada, the United States, and some Western European countries. The literature on these migrations is relatively rich and readily accessible; it can be consulted by those interested in the principal features of extra-regional emigration. Immigration to Latin America from other parts of the world is considered only when relevant to the understanding of the topic under analysis. The report focuses largely on the last two decades although international migrations within the region are nothing new; the emphasis on the last two decades reflects a concern with the policy relevance of present day issues.

Formal studies in the form of books, journal articles, and unpublished papers constitute the backbone of the report.

Heavy reliance has also been placed on journalistic or impressionistic sources since much of the evidence on international migration in the region is of this nature. Journalistic accounts are particularly helpful when drawing inferences regarding more recent developments. These sources have been supplemented with information obtained in personal conversations with researchers, government officials, and policy makers in various countries of the region concerned with some of the issues discussed in this report. Since the coverage of detailed studies on international migration in Latin America is very uneven, the report builds largely on the experience of those few countries for which more detailed information is available.

The initial section of the report describes the principal migratory movements within the region, presents some quantitative evidence regarding its probable volume, and discusses some of the problems confronted when attempting to estimate its magnitude. The determinants of international migration within Latin America are discussed in the next section, considering both sending and receiving areas. In the following section, data on selected characteristics of the migrants are evaluated and an effort is made to relate those characteristics to various types of migratory flows observed in the region. Some of the observed or postulated consequences of international migration are reviewed next, considering separately the possible consequences for sending and receiving countries. Immediately after, the report evaluates how international migration is perceived by governments in

the region, what policies have been instituted, and the effectiveness of these policies in influencing the direction, magnitude, and characteristics of migratory flows across national borders. The final section reviews some of the main conclusions of the report and suggests some research priorities.

INTERNATIONAL MIGRATION FLOWS WITHIN LATIN AMERICA: DIRECTION AND MAGNITUDE

The roots of contemporary intra-Latin American international migration can be found, in some cases, in population displacements that have been taking place for centuries. Other migrations can be traced, at least in part, to historical patterns of population settlement and political and economic organization established after the New World was occupied by European powers. Long-established patterns of cultural interaction among indigenous communities in areas that today include the Andean and Middle American countries, and population movements across present-day national boundaries of countries sharing similar socio-economic and population characteristics, exemplify the historical antecedents of migration in many parts of Latin America. More recently, the emergence of profound structural differences and uneven rates of economic and population growth among countries in the region appear to have resulted in the intensification of intra-regional migrations.

Intra-regional migrations of unskilled laborers have largely been limited to movements across contiguous countries. Most of these movements have been at first oriented towards rural areas of receiving countries, the migrants themselves having a rural background, where migrants have either replaced native workers who left for the cities (Argentina, Venezuela, and the Dominican Republic) or have provided manpower in areas of low population density having chronic labor shortages (Chileans

in Southern Argentina). Rural-to-rural international migration also involves landless and subsistence farmers who leave their countries in search of unoccupied agricultural land (Colombians into some regions of Eastern Ecuador; Salvadorians in Honduras), and colonists settling in frontier regions where land may be cheaper and/or of better quality than what is accessible to them in their home country (Brazilian settlers in the Alto Paraná region of Paraguay). Many of the earlier migrants who first moved to rural areas, as well as recent arrivals, increasingly have been choosing major urban areas of receiving societies as their eventual destination, like internal migrants. Many observers, in fact, regard regional international migration as an extension of internal migration within Latin American countries (Mármora, 1975; Carrón, 1979a).

Aside from the migratory flows that occur between individual pairs of countries, distinctive labor migration systems have evolved over time in various Latin American sub-regions. The two which are by far quantitatively most important are centered around the more dynamic and richer economies of Argentina and Venezuela. Argentina has traditionally drawn migrants from Chile, Bolivia, Paraguay, and to a lesser extent from Uruguay and Brazil, while Venezuela was the preferred destination primarily for Colombians. In recent years, however, Venezuela's regional labor market has expanded considerably and is now pulling workers in large numbers and at all skill levels from throughout Latin America. Recent reports suggest that

migrants by the thousands may be arriving in Venezuela from places as far away as Argentina, Uruguay, Peru, and the Dominican Republic, to name a few examples.

Other intra-regional migrations in Latin America are centered around certain countries which demonstrate strong flows of emigration. Colombia is typical of this situation since it sends migrants not only to Venezuela, but also to Ecuador and Panama, and the United States. Bolivian migrants can be found in Chile and Peru, as well as in Argentina. In the Northern Caribbean, Haitians emigrate in substantial numbers to the Dominican Republic and the Bahamas; they also emigrate to countries in the developed world and even in limited numbers to parts of Africa. In the past, Haitian emigration to Cuba was significant; the stamp of this migration is still evident in censuses of the two countries, although, for all intents and purposes, this migratory movement ended during the 1930's.

Quantitatively minor migratory flows occur in the non-Spanish speaking Eastern Caribbean countries (excluding Haiti, but including Jamaica and some emigration to the Bahamas from smaller islands). In this sub-region, migration is largely limited to the movement of a few skilled personnel and students among the different islands and mainland nations (Guyana), and to a "... small flow of Leeward Islanders to the U.S. Virgin Islands; Windward Islanders, especially from Grenada, to Trinidad; and temporary migrant labor during harvests to Barbados, Guadeloupe, and Martinique from the neighboring smaller islands."

(Segal, 1975b:9-10). Emigration to developed countries is a deeply ingrained feature of these societies.

In the Middle American region, the best known migratory flow reportedly involved tens of thousands of Salvadorian migrants in Honduras, many of whom returned to their homeland, El Salvador, following the 1969 war between these two countries. Salvadorian migrants may also be found in Nicaragua and Guatemala. Some reports suggest that the number of Salvadorians in Guatemala increased following the expulsion of Salvadorians from Honduras. Hondurans, in turn, have settled in Guatemala, Nicaragua, and El Salvador, although it is likely that many Honduran-born persons in El Salvador are of Salvadorian parentage. Finally, Nicaraguan migrants are known to be in Costa Rica and Honduras and Guatemalans in Mexico.

Table 1 presents some estimates of the number of intraregional migrants in receiving countries by country of birth or nationality. The first set of numbers (column 1) provides information on the number of Latin American migrants enumerated in selected countries of immigration from the most recent censuses for which data are available. The second column gives estimates for immigration into South American countries provided by the International Labour Office (ILO) in a study of labor migration released in 1974. The last column shows updated but largely speculative estimates that have been published or provided by informed observers on the basis of what they perceive is currently taking place in some countries as well as

brief comments about the estimates or selected migration flows. Some of these estimates appear to be fairly dependable. Others may be regarded as no better than guesses (in some cases, they appear to be very exaggerated guesses!), but they are useful since they reflect changes so recent that they may have not yet been documented.

A problem faced when evaluating the estimates presented in Table 1 concerns uncertainties as to the type of migration to which the estimates are referring. The problem of defining what constitutes a migrant is common to all migration studies and so is the problem of accurately estimating their number. The number of Latin American international migrants can be estimated with census tabulations that identify the population by place of birth in receiving countries in or outside the region. Some censuses include a question concerning the date in which a migrant entered the host country; with this question it is possible to estimate the timing of migrations and to investigate whether the characteristics of more recent arrivals differ from those of earlier migrants. Many problems, however, plague the estimates that can be derived from these data.

In countries having a large number of undocumented or illegal migrants, census data are likely to understate the true extent of migration since many of these migrants prefer not to be enumerated and may go out of their way to avoid being counted. Some estimates attempt to make allowance for this problem by adding on an assumed number of illegal migrants - thus the higher estimates.

Another problem is related to the time period used in defining migration. The ILO (1974a:8-9) has classified South American migrants into five categories according to the length of time spent in receiving countries. The first three types of migrants - frontier, seasonal, and short-term temporary workers - do not change their permanent residence, but migrate to the receiving countries for periods of time ranging from less than a month to six or seven months. Frontier workers are employed in the receiving country most of the year, while the others are not. Medium-term temporary workers and permanent workers emigrate for periods of time extending for years. The latter, as the label suggests, emigrate for indefinite periods of time, while the former eventually plan to return to their native country.

Seasonal migrations may well explain the great disparities in migration estimates observed for some countries. The enormous differences in immigration estimates to Argentina and Venezuela given by censuses and ILO (Table 1), for example, may reflect the inclusion of temporary immigrants in the latter study which do not appear in the census counts. Inclusion of an assumed number of undocumented workers in the ILO estimates, not enumerated in national censuses, may also contribute to the differences between the two sets of estimates.

At present no reliable estimates of intra-regional international migration can be obtained from transit data for Latin American countries. Undocumented population flows, uneven registration of entries and departures, and other problems associated with the recording of frontier crossings greatly limit the

usefulness of these statistics (Kritz and Gurak, 1979; Carrón et. al., 1976). This situation is not surprising since even statistically well developed countries, such as the United States, face similar problems when estimating international migration flows.

In any case, the rapidly changing nature of migration in the region, especially its short-term responsiveness to economic and political changes, makes most migration estimates obsolete shortly after they are made. One relevant example is Paraguayan emigration to Argentina. While this population movement has been taking place almost continuously for decades, there are indications that recently the direction of the flow has been reversed and that many Paraguayans are returning to their country of birth. This reversal is believed to have been produced by an economic boom in Paraguay (largely because of the construction of mammoth hydro-electric projects) which has coincided with a slowdown of the Argentinian economy. The effect of this return migration on the total number of Paraguayans in Argentina is not known.

No attempt will be made here to select the most plausible estimates, but it seems that census counts provide a floor under which the actual number of immigrants is not likely to be. The number of immigrants in some countries may well be much higher than indicated by censuses. As this discussion suggests, all that can be concluded with any certainty from the figures presented in Table 1 is that the volume of intra-regional international migration in Latin America appears to be in the millions.

In some countries, such as Venezuela, the number of migrants appears to be on the increase. Sufficient data are not available to estimate more precisely the magnitude of migration or to differentiate the migrants by the permanence of their moves.

DETERMINANTS OF INTRA-REGIONAL INTERNATIONAL MIGRATION IN LATIN AMERICA

The main determinants of intra-regional international migration in Latin America appear to be economic in nature. Natives from countries where income or living condition levels are lower or rates of unemployment and underemployment are higher tend to move to countries which are believed to be, or in fact are, wealthier and offer better employment prospects. The circumstances, however, that determine the direction and magnitude of migratory flows are more complex than such a broad generalization may suggest. Conventional social, economic and demographic indicators fail to show consistent and distinctive patterns useful in separating immigration from emigration countries (see Table 2). Residents from a richer country may migrate to poorer neighboring nations if economic opportunities there are expanding, as is the case with many Brazilians moving into Paraguay. In addition, emigration may take place from countries going through political or social upheavals regardless of relative economic levels. The end result depends on the balance of push and pull forces operating simultaneously in sending and receiving countries, as well as within particular regions of these countries.

Deep rooted, historically established features of Latin American societies (land tenure patterns, productive structure, etc.) can be regarded as key factors behind population displacements in the region, both within countries (Simmons et al., 1977:

75-82) and across national borders (Carrón, 1979:377-385). The bases for migrations, analysts suggest, can largely be found in the patterns of social and economic development that came to prevail in the region. Unfavorable trade and economic relations with the industrialized world perpetuate a pervasive status of dependency that exacerbates social and economic differences within and between countries in the region. Natural wealth differentials among Latin American nations (e.g., oil in Venezuela) and other factors also contribute to the disparities.

These differences constitute the underlying determinants that affect the form that internal and international migrations take within Latin America. More proximate mechanisms that influence short and long term international migration trends are differentials in levels of employment in sending and receiving countries, relative changes in real wage rates, political events, economic or social needs of receiving countries, and differential population growth rates, among others. The following discussion reviews the evidence regarding some of the most frequently investigated mediating mechanisms behind international migrations within Latin America.

LAND DISTRIBUTION

The pattern of uneven land distribution found in Latin America is regarded as a crucial determinant of internal and international migration. Evidence accumulated in studies conducted from the Caribbean to the Southern Cone point out that the well-known latifundia-minifundia complex generates conditions not conducive to optimal land and labor utilization. In most countries, a significant proportion of agricultural land, including some of the most productive, is not accessible to the peasantry.

Studies on the factors that determine emigration to Argentina from Paraguay (Galeano, 1978; Rivarola, 1967), Chile (Sanchez et al., 1977), and Bolivia (Carrón et al., 1976) support the hypothesis that unequal land distribution forces the poor peasants to move. In Paraguay, for example, Rivarola (1967:51) and Carrón (1976) report that in 1956 half of one percent of all agricultural holdings accounted for between 74 to 80 percent (depending on the size definition used) of all national lands under exploitation. The minifundio sector with almost 70 percent of agricultural holdings only occupied 2.3 percent of the productive land. By 1961, the year of the last major agricultural census in Paraguay, the situation had not changed significantly (Gillespie and Browning, 1979:509). Evidence from the island of Dominica in the Eastern Caribbean (Welch, 1968) and on Haiti (Cocco, 1975) also suggests that unequal access to land in countries of this region is one of the principal mechanisms leading to international migrations.

Considerable land fragmentation over the passing of many generations has left the Latin American minifundista in a position in which his meager agricultural plot - its soil often eroded or exhausted through uninterrupted and poor use - is not sufficiently productive to support him and his family even at a bare subsistence level. Other peasants, even less fortunate, have no land of their own. Under these circumstances, landless peasants and subsistence farmers supplement their incomes by working as migrant laborers for short durations of time, mainly during harvest season. Rural and semi-rural proletariats, as Whiteford and Adams (1973) describe them, sell their labor where there is a need, often in a country other than their own. Many eventually become permanent residents of other countries.

Many studies report that in recent times, the plight of the landless and the subsistence farmer has deteriorated. As a result of agricultural modernization, access to farm lands has in many countries actually diminished. Modern large-scale farms, usually oriented toward the export market, have expanded their land holdings at the expense of small farmers. Further, modern agricultural techniques, while leading to higher productivity, tend to displace labor. Reduced employment opportunities and a shrinking land base have combined to force many peasants away from their regions of birth. This situation is demonstrated in a recent and well-documented study by Durham (1979) which describes how Salvadorian emigration to Honduras and the subsequent

so-called "Soccer War" were fueled by Central American agrarian structures and export-oriented agricultural modernization. This study shows how the growth of export agricultural in Honduras exacerbated an already strained social situation as poor farmers - both Honduran and Salvadorian - competed with large land owners for farm land.

It should be noted that some analysts claim that access to minifundio plots acts as a brake to permanent emigration. Proponents of this view argue that farmers with access to subsistence plots (whether as owners, sharecroppers, or renters) only emigrate for short periods of time to work as laborers in order to supplement the product of their holdings (Whiteford and Adams, 1973; D. Marshall, no date 'a'; Glaessel-Brown, 1979). Landless peasants may also migrate to earn and accumulate enough money to buy land back home (Welch, 1968), or to buy land in the country of destination (Durham, 1979). This interpretation leads to the tentative conclusion that access to minifundio holdings has a critical influence in determining whether poor Latin American peasants become seasonal or permanent migrants.

FRONTIER EXPANSION AND COLONIZATION

Many migrations occurring in the region involve border crossing from rural areas, where poor peasants are blocked from possession of sufficient land, to frontier regions which have extensive unused territories. Some of these migrations have been taking place for long periods of time under very primitive conditions and differ from internal moves only by the fact that

peasants pass over national borders. Since many frontier regions in Latin America are undifferentiated physically or culturally, few factors interfere with these migrations.

Pi Hugarte (1979a) and Torales (1978) identify cultural affinities between areas of Colombia bordering on Ecuador and Panama, which they believe facilitate migration from Colombia to these two countries. In both cases, the similarities can be traced back to periods in which these regions were part of the same political units. In other parts of South America, such as the border areas which Argentina shares with Paraguay, Bolivia, and Chile, cultural similarities are obvious. In many of these regions, in fact, native-born residents may be direct descendants of earlier migrants from across the border.

In the area where the frontiers of Chile, Bolivia, and Peru meet, bounded by the northern-most Chilean city of Arica and the Peruvian city of Tacna, seasonal and permanent migrations of natives from these three countries have been noted. Many of the migrants are of indigenous Aymara stock. They move from one country to the other depending on such transient factors as the season of the year and fluctuations in economic conditions, or to conduct trade as they have been doing for centuries. Some of the more permanent migrants of Bolivian origin settling in Northern Chile are attracted by work opportunities in mining, since agricultural conditions there are poor.

The attempt by many South American countries to colonize formerly neglected territories seems to be promoting international

migration. For example, Brazil's efforts to incorporate inland areas into the national economy - through highways, like the Transamazonic, and land colonization attempts - appear to have induced population displacements to bordering countries. There are limited indications of indigenous groups being pushed from Brazil into the Peruvian and Ecuadorian sides of the border. There are also consistent, yet largely undocumented, reports suggesting that along much of the length of the Brazilian border, peasants from each side are settling in disputed frontier areas.

The most important contemporary migration accompanying frontier expansion has taken place over the last few years along the Paraguayan-Brazilian border (Braido, 1972; Paraguay: Secretaría Técnica de Planificación and CELADE, 1978). At first encouraged by the Paraguayan government and with the assistance of Brazilian colonization companies, thousands of Brazilian colonists moved in the Paraguayan provinces of Alto Paraná and Caaguazu where cheap agricultural lands could be purchased at a fraction of what land of similar quality would cost on the adjoining Brazilian side. The economic activities generated by the Brazilian colonies and those founded by settlers of other nationalities, and the construction of the Itaipu and Yacytera Dams, (the latter on the Paraguay-Argentina border), have further increased the attractiveness of Paraguay as a migration destination for Brazilians. Some observers believe that as many as 100,000 Brazilians may now be living in Paraguay. That this massive immigration (from the standpoint of Paraguay's total population)

could have taken place in such a short period of time (in about ten years) while hundreds of thousands of Paraguayans were living abroad is indicative of the complexity of the forces that determine international migration.

ECOLOGICAL FACTORS

Evidence from many Latin American countries suggests that migrations across contiguous frontiers can also result from geographical and ecological factors that tend to reduce the productivity of the soil. In Colombia's Choco region, for instance, excessive rainfall, a very complex hydrological system and other conditions typical of tropical rainforest areas limit development prospects and result in emigration to Panama (Torales, 1978). Denuding of hillsides and soil erosion produced by poor agricultural practices, as in El Salvador (Durham, 1979) or in the Northwest region of Haiti (D. Marshall, no date 'a') are also believed to have an influence on emigration.

WAGE DIFFERENTIALS

The overwhelming significance of differentials in wages and employment levels on intra-Latin American migration is emphasized by most students of the topic (ILO, 1974a; A. Marshall, 1979a; International Review Group on Population and Development, 1978). Evidence from all the areas experiencing substantial migratory flows in the region strongly suggest that the influence of economic factors overrides that of any other variable. The search for employment and the search for better wages are so

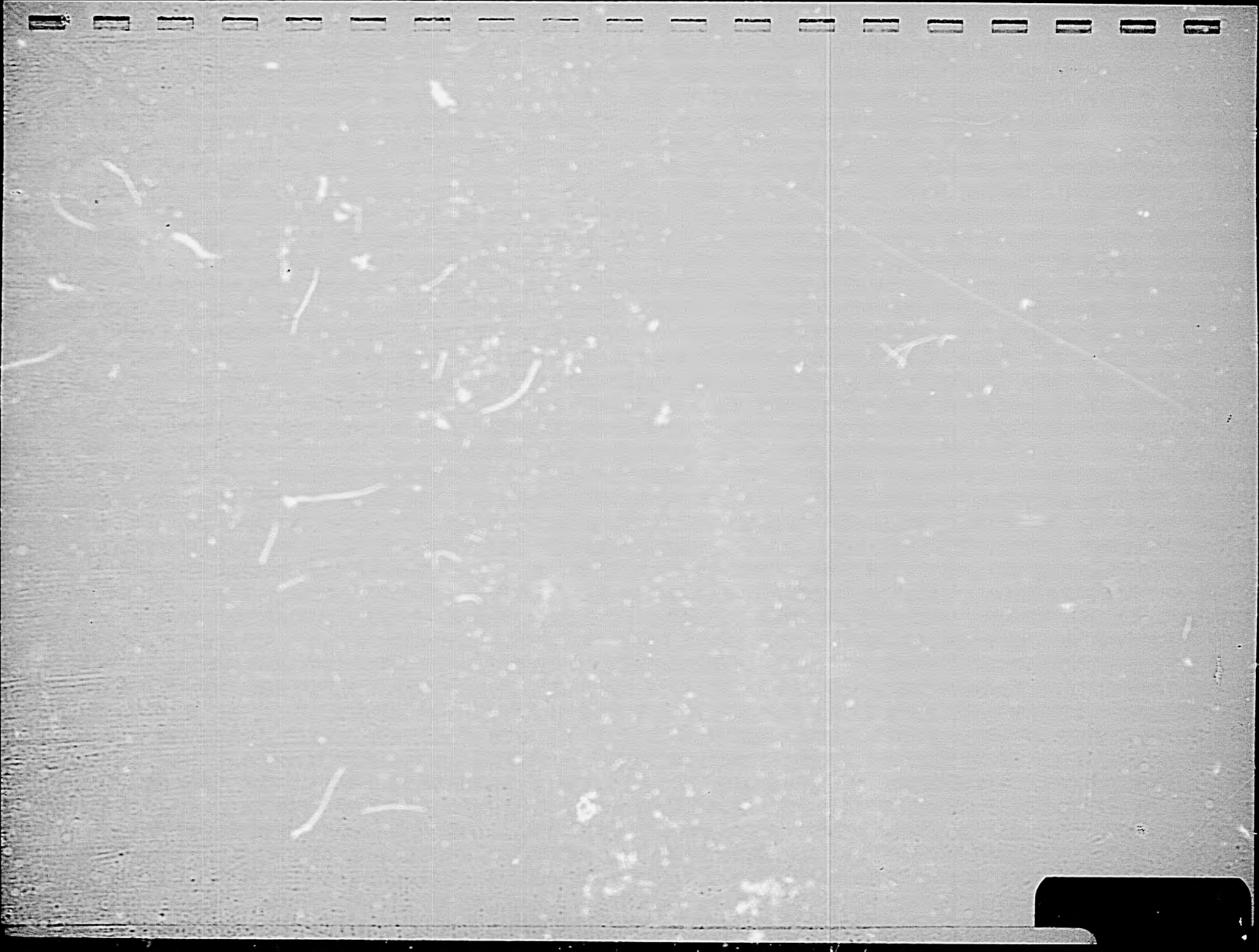
intertwined that it is almost impossible, and perhaps even misleading, to attempt to separate the two, especially when underemployment is so prevalent in Latin America. Most sources reviewed assume that international migrants are successful in obtaining jobs, although a few studies note that migrants face difficulties in finding employment (D. Marshall, no date 'a').

Quantitative evidence on wage rate differentials reported by observers and by the migrants themselves indicate that migrants in certain occupational categories earn significantly higher wages in host countries. In 1965, Bolivian cane cutters reportedly earned "... per ton of sugar cane cut, stripped, lopped, carried, stacked, and loaded in the Argentine harvest ... 30,720 Bolivian pesos" while "for equivalent work in the department of Santa Cruz, Bolivia the pay was 15,000 Bolivian pesos" (Conteris, 1970:53). In the Dominican Republic, half a hemisphere away, cane cutters received $1.50 per ton during the 1970's, while the going wage in Haiti for similar work was but a third of that. There are reports that in some parts of Haiti, cane cutters earned even lower wages, as low as 30 cents per ton (Glaessel-Brown, 1979: 243-244; and Corten, 1976:98-100). Curiously enough, it appears that self-employed subsistence peasants, not habitual cane cutters in Haiti, are the laborers who migrate to the Dominican Republic, although the evidence still suggests that migrant workers in general take advantage of wage differentials.

In Northern South America, similar wage differentials have also been reported. For instance, a sample of undocumented Colombian migrants deported from Venezuela reported that while

employed in that country (in 1978) they earned an average of 1,458 bolivares (approximately 350 U.S. dollars) per month. The minimum salary in Venezuela at the time was 450 bolivares (approximately 110 U.S. dollars) per month while in Colombia the minimum salary was 2580 pesos (approximately 70 U.S. dollars) per month (Colombia: Ministerio de Trabajo y Seguridad Social, 1979:49). Before migrating over half the workers in Colombia were earning less than the minimum Venezuelan salary (see Table 3). Some of these, especially service and agricultural workers, were barely receiving the minimum Colombian salary. Salaries of Colombian migrants in Venezuela, in skilled and unskilled occupations, were from two to four times higher than in their country of birth. As these figures from diverse regions of Latin America suggest, migrants can expect to earn from two to four times the wages that they would receive at home, if not more.

A number of country studies show that the mechanisms through which employment and wage differentials after intra-regional migrations are more complex than they first appear. Recent migration from Uruguay to Argentina, de Sierra (1977) points out, did not begin in earnest until the structural and political context in Uruguay deteriorated to such an extent that for many, emigration became the only solution in a time of crisis. Carrón et al. (1976) in their study of determining factors of emigration from limitrophe countries to Argentina conclude that intra-regional migration may take place not only during periods of economic expansion in the receiving countries, but



regions during certain times of the year. Similarly, the Dominican Republic is experiencing increased rural-urban migration as people seek better opportunities in the city. This process coupled with the Dominican attitude towards cutting cane has produced labor shortages on the sugar plantations (Glaessel-Brown, 1979).

There are indications that differentials in wage levels also account for a significant proportion of quantitatively less important flows of highly skilled intra-regional migrants. Some professionals employed by international agencies and the public sector, for example, command higher salaries when working in countries other than their own; as a result, many prefer to work outside their native countries to escape earning the "national" level salary. No studies exist, to my knowledge, on this subject, but impressionistic evidence suggests the presence of this phenomenon. This particular case of brain drain differs from the more common flow towards industrialized nations outside the region in that the moves are within Latin America.

Another factor that can affect migratory flows between sending and receiving countries, at least over the short run, is fluctuations in the relative value of national currencies. Stronger currencies in receiving countries help the migrant maximize his/her income if part of it is taken back home either in the form of savings or remittances. Colombian migrants in Venezuela indicate that wage differentials between the two countries are greater than the official exchange rates would suggest, since

the actual value of Colombian currency in the black market is less. In addition, the Colombian currency has been dropping in value relative to Venezuelan currency over the years (Gall, no date). A. Marshall (1979a) states that until 1974, migrants who sent remittances home benefitted from over-valued Argentinian currency.

A further development that appears to have intensified the effects of wage level differentials on migration is the emergence of regional employment markets. In some areas of Latin America, Venezuela in particular, labor markets appear to have expanded beyond bordering countries to which migratory flows were previously largely limited. Migrants into Venezuela, increasingly representing all skill levels, come from as far away as Argentina, Uruguay, Peru, Ecuador, and the Dominican Republic. The unique wealth of Venezuela, the much improved modern means of communication, and recruitment efforts in many Latin American countries all contribute to an explanation of this emerging migration web. Some of this migration was undoubtedly catalyzed by political instability in the sending countries (e.g., Argentina and Cuba), or by severely depressed economic conditions (e.g., Peru). It must be kept in mind, however, that such events have been ubiquitous in Latin America in the past, but migrations of this nature were never observed before. Some notable exceptions were the large scale migrations into Cuba and the Dominican Republic during the expansionary period of their respective sugar industries, as well as during the construction of the Panama Canal

(both during the French and American phases). However, there are important differences in that these movements almost exclusively involved unskilled labor, and the migrants originated in countries only within the Caribbean basin. Therefore, it may be said that the current pan-regional migration of workers at all skill levels into Venezuela is an unprecedented development.

EDUCATIONAL AND INFRASTRUCTURAL DIFFERENCES

Substantial differences in access to educational services and in the absorptive capacity of trained personnel in national economies between sending and receiving countries appear to be important factors in determining international migration within the region. This contention is supported by fragmentary data regarding a considerable number of international moves by individuals seeking better educational opportunities outside their countries. Students from countries bordering on Argentina, for example, are reported to attend Argentinian universities in large numbers. Espinola (1974) found over 1,000 Paraguayan students attending a single Argentinian institution - Eastern University. Few of these students planned to return to Paraguay after completing their studies. Situations similar to this may also be common with students of other nationalities in Argentina and other countries.

A related problem which seems to be growing in intensity concerns the inability of Latin American economies to productively absorb growing cohorts of university graduates and other skilled workers. In some countries there are signs that this situation is resulting in emigration to destinations within and outside the

region. Filgueira (1978), in his study of migratory propensities among Uruguayan university graduates, finds that Uruguay can be characterized as a country that has attained "modernization without development". This contradiction manifests itself in a serious imbalance between the supply and demand for professional and skilled workers. The Uruguayan economic structure is not sufficiently differentiated to absorb the large number of professionals and technicians produced by the country's education system. One solution for this problem was for the government to become the employer "of last resort". This resulted in the emergence of a bloated national bureaucracy, with underused and dissatisfied officials. Under this occupational regime, financial rewards are completely out-of-line with qualifications and avenues for upward social mobility are blocked. For many aspiring young graduates the only viable solution is emigration, a route taken by many Uruguayans in recent years.

Corvalan (1974) foresees a similar situation developing in Paraguay as rapid increases in enrollment at educational institutions may overproduce qualified professionals relative to the available occupational opportunities. The same problems may be emerging in many other Latin American countries.

IMPROVEMENTS IN TRANSPORTATION AND COMMUNICATION

Many students of intra-Latin American migration explain its growing importance by alluding to significant improvements in the transportation infrastructure linking one nation to another

(Rochcau, 1976; A. Marshall, 1979a; Kritz and Gurak, 1979). Rochcau (1976:4) goes so far to state that along with the economic prosperity of certain nations "the creation of an infrastructure of road communication" largely explains the new character and increase in volume of limitrophe migration. Rochcau observes furthermore, that the relative unimportance of migratory flows from neighboring countries into Brazil, despite the fact that Brazil is one of the most industrialized countries in the region, can be explained by poor communications between Brazil and other countries.

Some support for Rochcau's views is provided by studies that analyze recent migratory flows between Brazil and Paraguay. Ironically, however, the direction of this migratory flow runs counter to that predicted by Rochcau. As has been seen, Brazilian settlers and rural workers move into Paraguayan areas where lands are cheap and where employment opportunities are on the rise. Rivarola et al. (1979) conclude that two of the critical stimuli for these population movements into the Alto Paraná region of Paraguay were the completion of the international bridge over the Paraná River linking the two countries and the paving of national roads II and VII - two vital roads in this department. Before the bridge was built, both countries had been isolated from each other by extended unpopulated areas on both sides of the river.

Improvements in other modes of transportation, in particular air travel, have reduced "distances" between countries. Analysts of Caribbean and South American migration to the United States attribute great importance to this development in explaining

recent increases in migration. Better qualified migrants, in all likelihood, benefit to a greater extent from improvements in air transportation.

Increased flows of information - an improved awareness of options elsewhere - have also been suggested as important determinants of international migration. Carrón et al. (1976) emphasize the effect that information about employment opportunities, whether real or distorted, has had in channeling migration from Paraguay into Argentina. A. Marshall (1979b) notes the importance that informal channels of communication have on the present-day migration of laborers into Buenos Aires. The supply of unskilled immigrant workers is very responsive to expanding employment opportunities, suggesting that migrants hear about job openings through contacts maintained between colonies of migrants and the home country.

The role played by ethnic enclaves in the adaptation of migrants in a new milieu, noted by many students of emigration, is also present in intra-regional migrations. These enclaves and the continuous exchange of people between the host and sending countries eventually lead to the establishment of a strong tradition of migration. If unhindered by drastic political or economic changes, a cultural pattern of migratory behavior is internalized and young people in sending countries grow up continuously aware of the migration alternative. Rivarola (1967) observes that potential migrants in Paraguay always consider emigrating to Argentina as a possible destination rather than to Asunción. D. Marshall (no date 'a'; and 1979) argues convincingly that emigrating

is an ever-present option for people in Haiti and in the Eastern Caribbean countries. Some of the strongest evidence of the establishment of a migration option has been given by Hendricks (1974) in his revealing study of Dominican migration to the United States. He shows how a migrating stream perpetuates itself as emigration becomes the favored alternative for aspiring young adults over limited opportunities at home. It may be presumed that similar situations are reproduced in some migration streams within Latin America.

SOCIAL AND POLITICAL CONFLICT

A long tradition of migration due to political instability or repressive regimes has evolved in Latin America. Although the impact of political and social conflicts on inducing international migration within the region is not measurable in precise numerical terms, its significance should not be minimized.

Over the last two decades, for example, the Cuban revolution led to the migration of no less than half-a-million persons. From 30-40,000 Cubans found new homes in Latin America, particularly in Venezuela and some Central American republics, although the great majority went to the United States. The war between Honduras and El Salvador, largely a result of social tensions in the former country, fostered the repatriation of reportedly tens of thousands of Salvadorians. The social upheavals associated with the election of Allende as President of Chile and the subsequent overthrow of his government induced the displacement of thousands of Chileans. Venezuela has received thousands

of immigrants from Argentina and Uruguay, as well as Chile, who abandoned their countries for political reasons (Sassen-Koob, 1979). In Uruguay, at the least, the political crisis coincided with (or was produced by) a difficult economic situation which reinforced the tendency to migrate to other countries. Finally, short lasting, yet massive, refugee movements were observed in Central America during the Nicaraguan civil war. Tens of thousands of Nicaraguan refugees are reportedly still living in Costa Rica and Honduras.

POPULATION GROWTH AND INTERNATIONAL MIGRATION

The inter-relationships between population growth and international migration in Latin America are complex and defy simple generalizations. Under certain circumstances population growth may act as an important mediating variable reinforcing and magnifying the impact of more immediate economic and social factors that further migration. In other cases there are not apparent links between population growth and international migration within the region.

Within the Latin American context, international migrations take place indiscriminately from countries experiencing either high or low rates of population growth to countries having themselves high or low rates of population increase. Argentina and Venezuela, the two principal countries of destination in the region, occupy relatively extreme positions in terms of rates of natural increase. Argentina's natural increase rate is one of the lowest in Latin America, while that of Venezuela until very recently was one of the highest (see Table 2). Uruguay, a country with low rates of natural increase, exported about 10 percent of

its population in little more than a decade. Countries with high rates of natural increase (i.e., Paraguay) and moderate and declining rates (i.e., Colombia) are also net exporters of migrants. Some countries (i.e., Dominican Republic and Paraguay) are simultaneously importers and exporters of migrants.

In countries where the pace of new employment creation is slow or inadequate, population growth, in particular rapid increases in the number of new entrants to the labor force, aggravates already severe under- and unemployment problems. Uneven rates of economic and population growth combine to bring about, as it were, a situation of "relative overpopulation", a concept that provides a basis for articulating a consensus among analysts of international migration in Latin America (Mármora, 1979).

A detailed study of how the interface between population growth and economic factors relates to international migration in the region has been provided by Sanchez et al. (1977) in their analysis of limitrophe migration into Argentina. In their view, the importance gained by these population displacements after 1950 can only be explained by considering the influence of differential population growth rates on age structures and the capacity of the national economies to absorb certain types of labor. In Argentina, since about the 1950's, massive population shifts to cities coincided with a series of structural changes in the country's economy, which had an echo effect on the composition of the labor force. Localized labor vacuums were created in

selected economic areas dominated by unskilled workers. The surrounding countries which were experiencing much higher population growth rates and, hence, had greater difficulties in absorbing an expanding labor force, could provide workers to fill the vacancies in Argentina. Sanchez and his colleagues conclude, thus, that while it would be improper to establish direct causation between demographic growth and international migration in South America, population growth can and does aggravate the difficulties faced by countries attempting to develop and better utilize their human resources (Sanchez et al., 1977:11).

But even in the smaller and more densely populated countries in Central America and the Caribbean, as Segal (1975a) and others note, population pressure is a cause of concern not because of sheer numbers alone, but also because historical, physical, social, and economic features of these societies impede the optimum utilization of local resources, including population. Careful scrutiny of the situation in countries where conventional wisdom assumes that migratory movements were a direct consequence of population pressure, reveal a much more complex scenario. Durham (1979), in his study of the events leading to the war between El Salvador and Honduras, proposes that "competitive exclusion", or the process by which poor peasants are denied access to farm land, was a more important factor than population growth or density in initially producing migration from El Salvador to Honduras and, then, in intensifying the social conflicts that

eventually ignited the war. In Durham's (1979:169-170) own words:

> ...competition for land (in both El Salvador and Honduras) is not a simple density-dependent process. Indeed, evidence in each case suggests that competition does not occur so much among peasants as between peasants and large landowners. In El Salvador, the rural poor continue to be excluded from more than 60 percent of the nation's flattest and more fertile lands... In Honduras, similarly, access to land has been sharply affected by competiton between large landowners and small farmers. Particularly since World War II, the growing demand for land by the large commercial farmers has often meant a reduction in the lands available to campesinos... In both countries, population growth contributes to and intensifies the scarcity of resources - but it cannot be said to determine them.

He continues by noting that Salvadorian emigration to Honduras did contribute to the intensification of land competition between peasants and large landowners in that country. The expulsion of Salvadorian peasants from Honduras and the ensuing war occurred when the dominant classes in Honduras managed to use the migrants as convenient scapegoats for underlying social pressures. Durham also observes that if the average population growth rate prevailing in El Salvador in 1977 were to remain in effect up to the year 2,000 "the population factor could conceivably surpass the distribution factor" as the principal determinant of land scarcity (Durham, 1979:50), and presumably of emigration.

An analysis of social and economic institutions of the island of Dominica by Welch (1968) also concludes that structural factors interact with population variables to influence the level of emigration from some Caribbean islands. Welch found that

unequal access to land and few employment opportunities on the island were more crucial expulsion factors than population growth. A more rational land tenure system and some degree of industrialization, she claims, would induce most Dominicans to stay at home.

In short, evidence from studies made in different regions of Latin America suggest that under certain conditions high rates of natural increase may exacerbate structural problems and intensify economic imbalances that bring about international migration.

SOME MIGRANT CHARACTERISTICS

The paucity of detailed studies about intra-regional international migrants in the region, and more specifically, the almost complete lack of information about migrants to and from some countries, preclude reaching definite conclusions about the characteristics of the migrants. Prior studies about internal migrants in Latin America (see Simmons et al., 1977) and a limited number of studies specifically focusing on international migration, however, provide enough ground to derive some idea as to what may be some of the characteristics of the most "typical" migrants.

By far, the more common type of migrant, as suggested by the data to be reviewed below, appears to be a young, unmarried, poorly educated, and unskilled male of rural origin who illegally moves into a country, often bordering on the region where he was born, in search of work. At first, he usually leaves his country for a short period of time, but eventually settles in his new country. Frequently, he ends up residing in a large metropolitan center where he is employed in poorly paid occupations which require few skills.

At the other extreme, a migrant may be described who is somewhat older, better educated, with specialized skills, from an urban background, and who enters the recipient country legally. He has a family and leaves his country motivated by high aspiration levels which he cannot fulfill at home. At times, he emigrates for political reasons. These migrants are far fewer in number and closely resemble brain drain migrants to the developed countries.

In between these two extreme types of migrants, obviously, many other types of migrants with differing characteristics may be found. A brief review of some of the evidence that led to the above characterizations is presented below.

AGE

The most common generalization made about migrants is that they tend to be young. Confirmation for this consistent finding is provided by data for internal and international migrants. Intra-regional international migrants in Latin America are no exception. Census data for Argentina and Venezuela, the two principal recipients of migrants from neighboring countries in South America show that 50 percent or more of the recent migrants are in the most productive ages, 15 to 39 years (Morales Vergara, 1974; Heras et al., 1978; Chen and Picouet, 1979). A similar age selectivity has been recorded in Central American and Caribbean censuses (Allman and May, 1979; CELADE, 1977). Small scale surveys in areas of Argentina where immigrants from Chile and Bolivia concentrate (Oficina Sectorial de Desarrollo de Recursos Humanos, circa 1973) and interviews with illegal immigrants in deportation centers in the Venezuela-Colombia border (Colombia: Ministerio de Trabajo y Seguridad Social, 1979; Diócesis de Cucuta, 1978) show that few of the migrants had reached their 30th birthday at the time they arrived in the country of destination.

A preponderance of young adults is to be expected in

migratory flows given well-known cultural, social, and economic factors that induce higher geographical mobility - even across international borders - among individuals with fewer family obligations, physical assets, etc. In some countries, as noted earlier, moving from home to seek better fortune in urban places or foreign lands has even become an internalized pattern of behavior for young people upon reaching working age.

Selectivity by age, however, is not a constant. Peculiarities associated with specific intra-regional migration streams affect the age distribution of the migrant population. Age distributions of intra-regional international migrants who left their homelands because of social and political problems, such as many Uruguayan migrants in Argentina (Petruccelli, no date), include more younger and older people than a typical migrant age structure. The same situation is found with Brazilian colonizers in rural Paraguay (Braido, 1972). In both cases, it appears that family and marital status of the migrants affect the shape of the age structure. Migration flows characterized by a predominance of highly skilled individuals, such as Argentinian born migrants in Venezuela , have older age structures than unskilled Colombian migrants moving to the same country. The time required to acquire an education undoubtedly contributes to this differential.

The passing of time, however, has a marked effect on

the age distribution of migrants. The shape of the age distribution even suggests how recent the migration may have been. Migrant communities of old standing usually have older average ages than those just established. In Argentina in 1970, for instance, Brazilian and Urúguayan migrant communities had median ages of 47.7 and 49.7 years respectively, while the Bolivian, Chilean and Paraguayan communities had median ages of 33.3, 35.7, and 34.1 years in that same order (Morales Vergara, 1974). The significantly lower median ages of the migrants from the latter group of countries indicate the continuous arrival of new groups of migrants.

SEX

The sex composition of a migratory stream depends on a complex interplay of social, cultural, and economic factors. One of the most important determinants may be the demand for certain occupations in receiving countries, especially if these occupations are culturally sex-selective. Another important factor is the time that has passed since the migratory flow was established.

Since most international migrations respond to economic motives - securing employment or better returns for ones labor - it follows that the structure of employment opportunities in the country of destination plays a major role in pulling migrants with certain characteristics from the existing labor pool. Labor demand is not indifferent to work content. Many occupations by force of tradition or cultural definition have been seen as the

preserve of a given sex. Occupational sex-typing is a complex phenomenon and significant variations are found from one country to the next. For example, cane cutting is an occupation from which women have been excluded in most countries of the Caribbean basin; therefore, most migrants from Haiti to the Dominican Republic who legally or illegally work in the sugar fields are males (Marino Hernández, 1973). In contrast, in the sugar regions of Argentina - the provinces of Salta and Jujuy - male Bolivian migrants work shoulder-to-shoulder with their wives and other female relatives (Conteris, 1970). It may be assumed that females in the Bolivian migration stream are better represented than among the Haitian laborers in the Dominican Republic.

That is not to say that certain common patterns have not been detected. In general, it is found that men tend to clearly dominate migration streams oriented towards rural regions with a high demand for agricultural laborers. This conclusion is supported by reports from many countries. Among illegal Colombian migrants deported from Venezuela, for example, it is consistently found that almost all rural laborers are men (Didone, 1979; Diócesis de Cucuta, 1978). Women tend to be better represented in international migration streams flowing towards urban centers where, for instance, the demand for domestic servants is strong. This is the case in Buenos Aires where a significant percentage of migrant women from Paraguay and Bolivia are employed in that capacity (Carrón et al., 1976). This

tendency for the number of women to be better represented in urban concentrations has also been noted by Pi Hugarte (1979a) in small towns of Eastern Ecuador. He found that in small towns in this region 28.1 percent of the Colombian migrants were women as opposed to only 4 percent in the overall current in this predominantly rural area. He accounts for the difference by noting that the demand for female workers in small towns - waitresses, seamstresses, prostitutes - is considerably greater than in the rural sector proper.

The length of time migrants have been settled in the host country may also have an important effect in determining the sex composition of a community of international migrants. More often than not, single, unattached men "pioneer" migratory flows. After awhile, they may bring along other relatives, a bride, or enter into a consensual arrangement. The availability of mates and the frequency of inter-marriage with natives of the recipient country may lead to changes in the sex composition of the subsequent waves of migrants. Over eighty percent of a small sample of married Chilean migrants who arrived in Bariloche, Argentina before their spouses indicated that they had reached their destinations at least a year before their spouses (Rissech and Rodriguez, circa 1973:48). The late arriving spouses in all cases were females. The effect of the passage of time on the age composition of an international migration stream can also be illustrated with data from Venezuela. In 1961, the sex ratio of the enumerated Colombian population was 110.0; by 1971, it had dropped to 88.4 (Morales Vergara, 1974).

Finally, other factors, varying in importance depending on the characteristics of the migration in question, influence the sex composition. Some of these factors are the age and marital status of the migrants and whether the migrants arrive alone or in family groups. Brazilian colonizers in Paraguayan frontier areas tend to settle accompanied by their families; hence, the sex composition of these migrants shows a more balanced sex distribution (Braido, 1972).

FAMILY CHARACTERISTICS

Few definite conclusions can be reached regarding the family characteristics of intra-regional migrants in Latin America. Some studies suggest that in parts of the region a majority of migrants are unattached and arrive alone, while in other sections many migrants are married (including consensual arrangements) and may or may not migrate with their families. Evidently, the age of the migrants has an important role in their family status. The younger the migrant is, the more likely he is to be alone; the proportion of unattached persons is usually higher among young seasonal workers, unskilled laborers and migrants who move for educational purposes. Conversely, skilled workers and professionals are more likely to have families and bring them along when migrating.

Some fragmentary evidence suggests that seasonal workers with access to subsistence farms migrate while their spouses and other relatives tend the family plot. This situation is reported by Whiteford and Adams (1973) among Bolivian seasonal workers who migrate to Argentina and by D. Marshall (no date 'a') among

Haitian laborers in the Bahamas. Other studies indicate that peasant migrants who enter a country as colonizers (Braido, 1972; ILO, 1974a) frequently do so with families. Female service workers in urban places of destination countries are more likely to be single and not be in reproductive unions since their occupation is in many cases incompatible with having personal family obligations.

In comparison with other regions of the world, however, intra-regional migration in Latin America may include a greater proportion of family moves. The ILO (1974a), in fact, suggests that family migration is more common in this region than in others such as Europe.

EDUCATION

When analyzing the levels of educational attainment of intra-regional international migrants in Latin America, a fairly consistent pattern emerges: most migrants have very low levels of education. As may be expected, levels of educational attainment tend to be closely related to the type of migration in question. Migrants to regions with a high demand for unskilled labor - planting or harvesting in agricultural regions, domestic service, or construction work in cities - have low levels of educational attainment and include a high proportion of illiterates. This is shown by data on migration to Argentina from neighboring countries where according to a UNESCO report "disregarding economic areas or type of migration, the percent of illiterates or poorly educated foreign-born persons (from bordering countries) reaches

in most cases two-thirds of the migrants" (Mármora, 1976a:115). The same report notes that female migrants tend to be worse off educationally than their male counterparts. This finding is consistent with observed educational sex differentials among internal migrants in the region, and for Latin American populations generally (Alberts, 1977). Torales (1978) claims that most unskilled rural migrants moving from Colombia to Panama (in the Darien region) have extremely low levels of formal instruction, while the same situation has been reported for Haitian migrants in the Bahamas (D. Marshall, no date 'a').

High status international migrants employed as civil servants, officials of multi-national business enterprises, and professionals, as can be surmized, have educational backgrounds very different from those of unskilled laborers. Migrants to Venezuela from various countries in the Southern Cone are distributed more heavily in those occupations requiring lengthy periods of formal training (Kritz and Gurak, 1979). Data on immigration from Andean countries into Ecuador show a high occupational selectivity among migrants entering legally (OAS, 1974:29).

OCCUPATION

The fact that a great many of the international intra-regional migrants in Latin American hold occupations requiring few skills should not come as a surprise after having reviewed characteristics such as their age and educational background. International migrants, whether in rural areas or cities of Latin America tend to occupy less desirable and lower paid jobs. Bolivian,

Chilean, and Paraguayan migrants to Argentina, temporary as well as permanent, are usually employed in occupations like rural laborers or petty traders or, as in the case of many women, domestic servants (Carrón et al., 1976). Migration streams to urban areas have less skewed occupational distributions since they include a great many students and more skilled workers. Skilled laborers in rural areas of Argentina may range from as low as one percent among temporary migrants in the sugar regions of Salta and Jujuy to as high as thirty-three percent among permanent migrants in these same regions (Mármora, 1976a:135). The Argentinian data suggest that migrants who arrived earlier tend to be doing better occupationally.

Similar patterns of occupational distribution for rural migrants have been reported for other countries. For example, over eighty percent of a group of Colombian male migrants deported from Ecuador during part of 1977 and all of 1978 were either agricultural workers or laborers (Pi Hugarte, 1979a). The women did not fare much better: of those emplyed, sixty-one percent were in domestic service, the most concentrated occupational group. Durham (1979) cites evidence of Salvadorian refugees returning home from Honduras after the 1969 Soccer War indicating that about eighty percent had worked as rural laborers or had worked the land by themselves as renters, owners, or squatters. Haitian migrants in the Caribbean (D. Marshall, no date 'a'; and Marino Hernández, 1973) and seasonal workers throughout Central (CSUCA/PCCC, 1978) and South America (ILO, 1974a) also cluster in agricultural occupations.

There is evidence suggesting, however, that increasing numbers of unskilled migrants are reaching urban areas of receiving countries. This shift in the destination of migrants - now intensifying but apparently on a gradual increase for some years - and, thus, in the occupational insertion of migrants in destination countries, has been reported by Carrón et al., (1976), and other analysts of limitrophe migration into Argentina. The data on occupational distribution for migrants in Venezuela shown in Table 3 of this report suggests that a similar development is taking place in this country.

Migrants who left their countries as a result of social or political problems (exiles, refugees) appear to have more favorable occupational structures than other international migrants within Latin America. It was noted earlier that Kritz and Gurak (1979) observed a tendency for considerable occupational selectivity among Argentinian, Chilean, and Uruguayan migrants to Venezuela during the 1960's and 1970's. Marked occupational selectivity among economically active Cuban exiles in Costa Rica has been reported by Schmidt (1979) in her analysis of the 1963 Costa Rican census.

It would seem, in conclusion, that most intra-regional international migrants in Latin America are employed in low skilled, agricultural labor. A growing number of migrants are employed in low skilled urban occupations, while a relatively small number of migrants, some of them political exiles and refugees, can be found in highly skilled slots of the occupational structures of receiving countries.

LEGAL STATUS

The distribution of intra-regional migrants by legal status seems to be characterized by high irregularity. There is a dearth of reliable and up-to-date information on this issue, but some sense of the situation can be obtained from selected sources.

The ratio of legal migrants to total migrants appears to be low. Results of surveys conducted by the Oficina Sectorial de Desarrollo de Recursos Humanos in Argentina during the early 1970's, summarized by A. Marshall (1979a:16), indicate that the percent of "clandestine entrances" (migrants who entered the c untry without valid documents, such as visas or work permits, whether short or long term) was low, fluctuating between 2 and 8 percent of all entrances. This was not the case with the percentage of "illegal permanent migrants" (employed without work permits but who entered the country with a valid visa, with expired work permits, etc.) as from 20 to 60 percent of all migrants were in this category. More importantly, only about five percent of the immigrants surveyed had entered the country legally on a permanent basis, although these percentages increased over time as clandestine and illegal migrants formalized their status by taking advantage of amnesty decrees. In urban areas, A. Marshall reports, the percent of migrants with an illegal status was lower than in the countryside.

Richer detail on the legal status of the migrants can be obtained from the various regional surveys. Among Bolivian

migrants working in the tobacco regions of Northern Argentina, for instance, 20 percent had entered the country with tourist or transit visas. These visas did not entitle them to work. About 52 percent had come into Argentina as "braceros" or under other types of temporary work permits. The rest were clandestine entrances or were not asked any documentation when crossing the border. At the time of the survey, over two-thirds of the migrants had legalized their status (Villar, 1973a:41-43). Most of the temporary workers, importantly, had been recruited by the firm for which they first worked in Argentina. The failure of these firms to repatriate the temporary workers, as they were required to do, appears to be at least partly responsible for the permanent stay of these laborers in the country (Villar, 1973a:42).

The patterns of legal status shown by other local surveys confirm that most migrants reached Argentina in unorthodox ways (Oficina Sectorial de Desarrollo de Recursos Humanos, circa 1973). Observed variations from locality to locality probably reflect the nature of specific migratory flows and the characteristics of the migrants themselves. The percent of Chilean migrants who arrived in Argentina with tourist visas, for example, was reported to be much higher than among the Bolivians (Pavón and Rodríguez, 1973; Rissech and Rodríguez, 1973). Among the latter, as shown above, the percentage of temporary workers is highest. Differences in educational and occupational characteristics of both groups of migrants can go a long way towards explaining these divergent patterns.

In other countries, the situation is not much different. Mármora (1975) claims that in Ecuador and Honduras over 50 percent of the migrants do not have the proper documentation. Arbelaez (1977) roughly estimates that for every Colombian legal migrant entering Venezuela between 1963 and 1973, at least two, and possibly more, moved into Venezuela illegally to work there. Most Haitian migrants in the Dominican Republic entered the country surreptitiously (Marino Hernández, 1973); the bulk of the Bahamian immigrants from Haiti are illegal (D. Marshall, no date 'a'). In the view of the ILO (1974a), South American governments as a whole consider that between 80 to 90 percent of intra-regional migrations are illegal.

There is some evidence suggesting that migrants of different educational/occupational strata differ in the way they enter the country of destination. The fact that the percent of legal entries among more skilled and professional workers is higher is demonstrated by census data for some countries and by a recent study on immigration to Venezuela (Sassen-Koob, 1979). This finding would suggest that political refugees usually enter recipient countries legally, or that at least, they can adjust their status without great difficulties. Data from small samples of illegal Colombian migrants in Venezuela also show that illegal migrants of different skill levels have a tendency to enter the country using dissimilar approaches. The more skilled migrants enter with legally obtained tourist visas, but overstay

their visit and obtain a job while attempting to legalize their stay. Less-qualified illegal entrants arrive in Venezuela without any legal visa (Didone, 1979).

CONSEQUENCES OF INTRA-REGIONAL INTERNATIONAL MIGRATION

Empirical evidence on the consequences of intra-regional migration in Latin America is sparse. A few available surveys can be used to make limited inferences about how migrants have fared in the countries of destination. In general, these surveys show that migrants tend to be worse off than the natives in receiving countries. A majority of them have low paying and less desirable jobs; few receive social services and they tend to live in sub-standard housing. The plight of the illegal migrants is, as may be expected, considerably worse than that of the legal migrant. The latter, in many cases, especially with the passage of time, closely approximates living conditions similar to those enjoyed by natives in his own social class.

The evidence reviewed below indicates that the illegal migrant is an unskilled, uneducated worker who lacks human and labor rights taken for granted by citizens and legal residents of the host country. He is exploited and abused by employers who take advantage of his precarious status. But, as some observers point out, these conditions are acceptable to many migrants, since, first, some only intend to stay temporarily, and secondly, and perhaps more important, their conditions in receiving countries, as poor as they may be, are better than what they had in their own country. International migrants, like internal migrants, presumably base their decision on whether or not to move on the

basis of a rational calculus that permits them to evaluate potential costs and benefits. The move into a new country, then, is a way in which the migrant maximizes the returns of his labor.

Other aggregate level studies evaluate a limited number of consequences of migration with empirical data. Typically, these studies consider how demographic and macro-economic variables are affected by international migration in the sending and receiving countries.

Finally, plausible, but unproven, consequences of intra-regional international migration have been postulated by certain authors. A number of these assumed consequences have been stated with reference to emigration from the region to developed countries, but they are also applicable to migrations taking place within Latin America. When dealing with intra-regional migrations, anaysts often implicitly or explicitly assume that beneficial or detrimental consequences for countries of emigration tend to have the opposite effect in receiving countries. A brief review of these studies follows.

CHANGES IN THE SIZE, COMPOSITION, AND GROWTH RATE OF THE POPULATION

Migration has immediate and long-term consequences on the size and composition of a country's population. The most immediate effect occurs through the addition or subtraction of members of the population, and over the long term, through the changes that migration, usually selective of specific sex and age groups, produces on fertility levels.

Figures on the approximate magnitude of migration within Latin America were reviewed earlier; they give a relative idea of its importance in affecting population size in sending and receiving countries. In most countries of the region, the importance of intra-regional migration on population size appears to be moderate, never exceeding, according to the latest censuses, three percent of the total population of the receiving countries (Kritz and Gurak, 1979). Five countries - Argentina, Honduras, Panama, Paraguay, and Venezuela - record the greatest percentages of foreign-born of Latin American origin. In other countries, the percentage of immigrants from Latin America is considerably lower. In absolute numbers, again according to census data, the most sizable communities of Latin American migrants are found in Argentina and Venezuela. It is certain, however, that the number of migrants of Latin American origin in some countries is much larger than what is suggested by censuses, particularly in countries where the number of undocumented migrants is substantial, or where more recent migrations have occurred.

At a less aggregate level, however, the impact of immigration on population size and composition is magnified since intra-regional migrants concentrate in specific areas. Migrants from limitrophe countries have a tendency to settle in regions near the home country or in capital cities of host countries, such as Caracas and Buenos Aires. Close to 15 percent of the Latin American immigrants enumerate in the 1970 Argentinian census were residing in Buenos Aires (Carrón et al., 1976:34). Almost 30

percent of these immigrants were living in the province of Buenos Aires and the balance were concentrated in a few other provinces. The concentration of limitrophe migrants in the Buenos Aires region, however, closely resembles that of the Argentinian population. In 1961, over 75 percent of Colombians residing in Venezuela were established in areas bordering the home country (Carrón, 1979a).

In some countries, emigration has had a dramatic impact on population size. It has been estimated, for example, that in just the five years between 1970 and 1975, 124,700 Uruguayans emirated to Argentina (de Sierra, 1971:11). Between 1963 and 1975, the country lost about 10 percent of the population that would have been expected by the latter year according to projections based on the 1963 census (de Sierra, 1977:1). Arbelaez (1977) concluded that over half-a-million Colombians emigrated to Venezuela (441,831) and Ecuador (74,127) during the years 1963-73. Impressionistic evidence on Colombian emigration to Venezuela during the same period suggests that the volume was much higher (SENALDE and Colombia: Ministerio de Trabajo, 1976a). By 1973, over 470,000 Paraguayans may have been living in Argentina, although other figures suggest that the number may have been considerably higher (Gillespie and Browning, 1979). Whatever the correct figure, it appears that about 15 percent of Paraguay's population was living outside the country at that time. These percentages approximate or exceed Segal's (1975a) estimated percent of the Caribbean population that has emigrated to the developed

countries. He estimates that about three million migrants left the Caribbean between 1950 and the early 1970's, or about 10 percent of the population of this sub-region.

The population growth rate of sending countries can be substantially affected by migration. In Uruguay, the population growth rate declined to 0.5 percent during the period of most intense emigration, although the rate of natural increase, 1.3, was over twice as large. Haitian statisticians estimate that in recent years emigration has accounted for a decrease in the country's population growth rate of half of one percent (Personal communication).

The delayed effects that migration can have on vital processes are well known. In Colombia, just to cite one example, at least 150,000 women of reproductive age, and probably many more, are believed to have left the country between 1964 and 1973 (Arbelaez, 1977). The emigration of these women is certain to have contributed to the declining fertility trend observed at that time, and should manifest itself in future years as the fertility contributions of smaller birth cohorts will, other variables held constant, lead to lower levels of the birth rate.

The effects of immigration, naturally, are the opposite of those of emigration on population size and growth rates. The specific impact will depend, among other factors, on the volume of migration and the size of the population of the receiving country.

CHANGES IN EMPLOYMENT AND WAGE RATES

Since most sending countries in Latin America have high unemployment and underemployment rates, migration to other countries should contribute to their reduction. In Paraguay, for instance, an ILO study (cited in Gillespie and Browning, 1979) concluded that 34 percent of the labor force in Asunción and 31 percent of the labor force in rural areas of the country were underutilized. Without the departure of close to 15 percent of the employment age population, the rate of labor underutilization would have been much higher. In spite of heavy emigration from Uruguay, the unemployment rate in the country remained at a fairly stationary level between 1965 and 1974; but, in the absence of emigration the situation would have been much worse.

It is logical to assume that migrants have a beneficial impact in receiving countries since they provide needed labor. This certainly seems to be the case in countries experiencing rapid rates of economic growth. Venezuela during most of the 1970's and Argentina before 1950 (Carrón, 1977) exemplify fast growing economies which drew migrants from neighboring countries since their own labor forces were unable to provide sufficient manpower.

Under other conditions, it is less certain what consequences immigration may have in receiving economies. A charge frequently made is that immigration tends to displace native labor or create an excess labor situation with detrimental effects on wage levels, thus forcing the natives to compete

with immigrants willing to work for lower pay. Existing evidence tends to partially validate these arguments, although some analysts claim that migrants are seldom in direct competition with the natives. Survey data obtained from immigrants in Argentina (Oficina Sectorial de Desarrollo de Recursos Humanos, circa 1973), and from undocumented immigrants deported from Venezuela to Colombia (Colombia: Ministerio de Trabajo y de Seguridad Social, 1979) show that migrant workers frequently do not receive fringe benefits and other social benefits (i.e., vacations, sick leave, etc.) to which workers in these countries are entitled by law. Some sources suggest that migrant workers, especially if undocumented, are paid less than the natives. In either case, migrants would seem not only to be at a disadvantage, but to unfairly compete with natives for jobs.

Some analysts believe, on the other hand, that the postulated negative effects of immigration on employment and wage levels are exaggerated since immigrants are not employed in occupations prefered by natives. According to this view, most migrants enter occupations not acceptable to natives because of their low status, difficult working conditions, or low levels of pay. The reasons why some immigration economies have developed a capacity to absorb large numbers of foreign workers in low pay, low skill occupations - even under conditions of slow or non-economic growth - have been addressed by various analysts of intra-regional migrations in Latin America. They feel that the fundamental reason is economic, but they offer somewhat

different interpretations of the mechanisms that sustain the situation. The main argument states that as long as labor is cheaper than other factors of production, entrepeneurs will have no incentive to replace it. A. Marshall (1979a) believes this to be the reason why technologically flexible industries (i.e., construction), may prefer to rely on outmoded labor-intensive production methods rather than to adopt more modern capital-intensive techniques at a relatively higher cost. The interpretation reached by Carrón and his associates (1976) is similar but suggests, in addition, that the very survival of uneconomical, inefficient industries is at stake, since without access to cheap foreign labor they could not compete in the marketplace. Both Marshall and Carrón et al. based their conclusions on the analysis of the Argentinian economy, a diversified economy highly atypical of those found in most Latin American countries.

Corten and his associates (1976) and Glaessel-Brown (1979), however, arrive at somewhat similar conclusions when analyzing the emigration of Haitian laborers to the Dominican Republic - an economy more typical of Latin America. The Dominican Republic imports thousands of Haitian cane cutters every year. Yet, paradoxically, it is itself a country which sends hundreds of thousands of emigrants abroad. These analysts believe that migration from Haiti persists because the sugar industry can use the migrants as a cushion against unpredictable oscillations in prices and demand for sugar on the international

markets. The alternative would be to invest heavily in labor-saving equipment, since contractions in demand would then be absorbed by idle machines rather than men. But, since manpower can be obtained at a lower price and does not require tying up large sums of capital, archaic production techniques survive and no efforts are made to modernize the harvesting of sugar cane. Since the illegal status of many migrants places them at a distinct disadvantage as far as remuneration and job protection are concerned, Glaessel-Brown and Corten and his associates suggest that it is to the benefit of the employers to maintain the migrant workers in their illegal situation. Glaessel-Brown, however, also indicates that cane cutting is a very unappealling occupation for Dominicans for a variety of cultural and economic reasons. Due to these causes, it has been suggested that in rural areas of the Dominican Republic, there are serious manpower shortages at harvest time which Haitian migrants fill.

Seasonal or temporary migrations, as opposed to long-term or permanent migrations, allow underemployed workers in many countries to supplement their income. Evidence from various countries suggests that it is not uncommon for seasonal migrants to originate in areas where the incidence of minifundios is high. Cash income earned in seasonal occupations is used by these migrants to supplement the subsistence product of the minifundios. Seasonal Haitian migration to the Dominican Republic is typical of this phenomenon (Corten, 1976). It is also reported to be prevalent among Bolivian seasonal migrants going into Argentina (White-

ford and Adams, 1973) and may also characterize seasonal workers from Guatemala who go to Mexico to work in the tobacco harvest (Bataillon and Lebot, 1976). Seasonal migrants at times take advantage of different harvesting cycles to work both on their own subsistence plots and in other countries, or, if the above is not feasible, they may leave their minifundios in the charge of friends or relatives while they are working abroad.

Temporary demand for unskilled labor in urban areas of Argentina, as A. Marshall (1979b) suggests, usually centers in industries which depend on "floating" labor surpluses and that accomodate their labor input to their productive cycles, in part by expanding and/or contracting the use of foreign temporary workers. The increase in migration from neighboring countries to Venezuela following the implementation of an expanded development plan in the mid-1970's displays similar characteristics. It has caused a sudden demand for unskilled labor as capital investments in the manufacturing and construction sectors have soared (Sassen-Koob, 1979). Future analysis will tell whether the increased demand for labor will be satisfied by workers permanently settling in Venezuela or by workers originating in neighboring countries who move back and forth - or circulate - in response to short-term labor market fluctuations. Some of these foreign workers, as in Argentina, may migrate within the receiving country in response to differential employment opportunities in rural and urban areas.

It may be postulated that a removal of a portion of the labor force through emigration should reduce the downward pressure on wages. However, under the labor market conditions faced by most Latin American sending countries, heavily saturated with an excess of unemployed and underemployed workers, the effect of emigration on the wage rate is likely to be imperceptible. Only in countries with exceptionally low open unemployment rates for the region might this consequence of emigration be substantial.

Analysis of the effects of emigration on the composition of the labor force reveals that the beneficial consequences postulated at the aggregate level may weaken when considering selected skill levels. For a variety of reasons, the composition of the skilled labor market for Latin American sending countries does not match the structure of the economy. Some highly skilled and professional occupations are saturated while others have a deficit (Mármora, 1979). Petras (1978) notes that throughout the Caribbean, shortages and surpluses of labor co-exist. Emigration of individuals with specified educational and occupational characteristics may contribute to further labor imbalances in the economy of the sending country, thus hindering its development. The emigration of large numbers of skilled professionals from Argentina, Chile, and Uruguay to other Latin American countries - "intra-regional brain drain" - and from countries in the region to the developed world - "external brain drain" - and its implications for the future development of sending countries are notorious examples.

Emigration, in a sense, entails a considerable cost which the sending society has to pay. Emigrants tend to be young entrants into the labor force who have been reared, and if educated, at the expense of their country of birth, but who leave after only a few years of economic activity or even before they make any contribution to the country's well-being. The costs to the sending society obviously vary depending on the length and complexity of the training received by the migrant. Petrucelli and Fortuna (1976), for instance, estimate that Uruguay looses about $20,000 total per trained professional who emigrates. Other costs, of an indirect nature are also incurred by the country over the long run.

REMITTANCES

Another important consequence of migration often noted in the literature is wealth transfers from receiving to sending countries. Remittances are assumed to have a negative effect in receiving economies since they represent a siphoning away of wealth generated in these countries. This perspective, however, ignores the fact that the migrants themselves contribute to the generation of wealth. There is not sufficient information at the present time to elucidate how remittances affect the economies of sending and receiving countries in the region or even to establish with some degree of certainty how important they are. What little evidence there is, even concerning such simple facts as whether remittances are significant, is conflicting. Some

studies suggest that remittances from intra-regional migrants are substantial, while others show them to be unimportant.

With data from a survey of Haitian men employed in a government department in Nassau, Bahamas, it was estimated that each of about 10,000 migrants sent home 300 dollars a year (D. Marshall, no date 'a'), or a total of three million dollars, a considerable sum for a country the size of the Bahamas. About five percent of the Haitian gross national product (GNP) comes directly from the remittances emigrants send home (Allman and May, 1979:12). This estimate, it should be noted, also includes remittances from Haitian emigrants in the developed countries. Remittances are a very important feature of the economic life of many other Caribbean countries, although as in Haiti, most remittances originate outside the region. Barbados, for example, received 10.4 million dollars in remittances in 1970. Some of these monies came from places such as Curacao and Trinidad (Ebanks, 1975a:35).

Colombian migrants to Venezuela also seem to be able to save enough money to take or send back to Colombia. Ninety percent of a group of Colombian undocumented migrants to be deported from Venezuela reported that they had remained in the latter country in order to send remittances back home or to accumulate sufficient savings before returning to Colombia (Diócesis de Cucuta, 1978). Other results from this survey and from a survey of deported Colombians taken some months later by the Colombian Ministerio de Trabajo y Seguridad Social (1979) indicate that most migrants are able to save enough money to

help support their families or to take back with them whenever they return. It may be safely assumed that many millions of dollars are involved; it is unlikely that their loss may pose a heavy burden to the Venezuelan economy.

Other studies, like the surveys of Bolivian immigrants to Argentina sponsored by the Oficina Sectorial de Desarrollo de Recursos Humanos (circa 1973), found that the earnings of the migrants are so exiguous that little of the money they manage to save is sent to Bolivia. The very precarious living standards of the rural Bolivian migrants may help explain their inability to save. This finding, however, only applies to permanent Bolivian migrants in Argentina and may not adequately describe the situation of seasonal migrants.

Remittances may be used to help support relatives who remained behind, as savings to improve living conditions (housing), or for making long-term investments (purchasing land). Some observers believe that remittances may not be very beneficial in sending countries, since they may lead to the consumption of non-essential items (usually purchased abroad), thus hurting the national economy. This consideration may not be relevant to rural migrants who barely manage to earn enough to stay above a subsistence level.

A final point worth making is that remittances to sending countries from professional and other highly skilled migrants may not be very significant. Migrants of this type tend to bring their immediate families along with them when emigrating.

OTHER CONSEQUENCES OF MIGRATION

Another important consequence of migration noted by some observers (ILO, 1974a) concerns the corrective influence that limitrophe migrations have had in countries that have experienced accelerated rural-urban migration of their nationals. In the view of the ILO, intra-regional international migration has been an essential element in the economic "take-off" of the wealthier South American countries. This is the case primarily because foreign workers have provided the manpower necessary for agricultural production since a high proportion of the native rural work force has moved to the cities. The same situation has been observed in the Dominican Republic where urban-oriented development has encouraged internal migration to the cities, creating labor shortages on the sugar plantations, easily filled by Haitians.

Many sources suggest that limitrophe migrants increase the demand for services in receiving societies. The most visible indication of the problem is perceived to be the slums and shanty towns surrounding Buenos Aires and Caracas where ethnic neighborhoods of Latin American migrants are found (Rochcau, 1976). Solberg (1978:162) cites sources that suggest that at least 250,000 Paraguayans reside in "villas miserias" around Buenos Aires. Other sources point out the added costs that receiving countries must face when trying to educate the children of migrants who do not speak or have a poor command of the national language. Some examples are the Portuguese and German-speaking Brazilians entering Paraguay as colonists (Paraguay: Secretaría Técnica de

Planificación and CELADE, 1978), Guarani-speaking Paraguayan and Qhechua-speaking Bolivian immigrants in Argentina (Pedisie, 1971), and French (Patua)-speaking Haitians in the Bahamas (A. Marshall, no date 'a').

Other evidence suggests that migrants, by concentrating in some sections of a country, may tax the capacity of local health services. According to an informant, over 60 percent of the services provided in the Regional Hospital of Arica (located in Northern Chile) were received by Bolivian immigrants. Immigrants of low health strata may place added demands on medical and sanitary services, and also may contribute to the appearance and/or spread of health problems. Evidence on the ill effects of international migration on health standards has been suggested by some studies (Mármora, no date).

Some authors note that emigration reduces the size of the consumer market in sending countries (Filgueira, Veiga, and Petruccelli, 1978;) with negative consequences for economic development. Alegre further asserts that emigration contributes to the rise in the per capita cost of providing certain services. Other observers, such as Filgueira (1978), Patterson (1978), and Allman and May (1979) focus on the social costs of emigration and its deleterious effect on impeding social change by reinforcing "the external orientation and chronic dependence of these societies on foreign economies" and by stifling "the emergence of alternative strategies of development" (Patterson, 1978:138).

In receiving countries, finally, certain costs are perceived in social terms since immigration by its very nature entails a process of acculturation to the norms and values of the host society. While the evidence on this topic is largely limited to non-objective assessments, it may be presumed that problems with the acculturation of international migrants are more related to their social class than to their national origins, given common cultural and linguistic heritages among many countries in the region. In some countries, however, racial, linguistic, and ethnic differences could also contribute to assimilation problems.

This view is supported by a study of migration into Buenos Aires, Argentina in which the adaptation problems of native Argentinians born outside the city and Bolivians and Paraguayans are compared. While, in general, the Argentinians appear to have become better adapted to the urban environment than the other migrants, they also seem to have endured many of the same problems. Thirty-three percent of the Argentinians, for example, felt they were discriminated against by the people of Buenos Aires; the percentage of Paraguayans and Bolivians that felt discriminated against by Argentinians were 34 and 31 percent, respectively (Campos and Pi Hugarte, 1973:110). Differences in ethnic/racial characteristics among the migrants (native as well as foreign, many of whom are of indigenous or metizo origin) and Argentinians from Buenos Aires (largely of European descent) may explain at least in part their similar feelings of being discriminated.

Where cultural, racial, or linguistic differences are very marked, more serious difficulties should be expected. This appears to be the case in the Bahamas where it seems that the French-speaking Haitians encounter grave difficulties in adapting to a country where English is spoken, whereas the English-speaking Jamaicans fare better(A. Marshall, no date 'a'). Educational differences between the two immigrant groups may also be involved.

INTRA-REGIONAL INTERNATIONAL MIGRATION: PERCEPTIONS AND POLICY ISSUES

This section presents a brief review of how Latin American governments perceive and react to international migration movements. The discussion attempts to focus on evidence concerning population displacements within the region, although information about policy issues relating to migrations between the region and the outside world have been included to facilitate presentation. Selective (skilled) immigration and emigration policies are considered separately as are the policy issues related to unskilled labor migrations. Since the evidence on migration policy is sparse for most countries, the review relies heavily on information available from a few countries. Despite this shortcoming, it is possible to obtain a generalized view of Latin American perceptions of international migration and how governments have tried to influence it.

SELECTIVE IMMIGRATION POLICIES

Brazil and every Spanish-speaking Caribbean, Middle and South American country for which pertinent information is available favor the immigration of professional and skilled workers of European stock from outside the region (Torrado, 1979a). Presumably, these countries also facilitate and encourage selective immigration from countries of the region sharing the same cultural heritage. At the base of this policy is an attempt to remedy "the insufficient local supply

of particular skills" or an effort "to promote the immigration of skilled laborers as a way of transferring technology from relatively more developed countries" (Torrado, 1979b:430). It is not clear what the policies of the governments in the region are regarding immigration of skilled people from other regions of the world, but there appear to be some cultural biases underscoring the preference for European migrants. The preferential policies, however, are not exclusionary since small contingents of Asian migrants - Japanese, in particular - usually with the financial backing of their governments, have entered Argentina, Paraguay, and other countries in recent years.

Of all the countries in the Spanish/Portuguese-speaking group, only Argentina claims to desire foreign immigrants for demographic reasons - to populate the country - though, the immigration policies of other countries suggest that they share similar considerations. Bolivia, Honduras, and Paraguay, in their responses to the United Nations' Third Inquiry among Governments on Population and Development, stated that selective immigration was desirable since it assisted the country's rural development efforts, particularly through the colonization of unexploited rural regions (Torrado, 1979a).

Other countries in the region where other languages are spoken - in the Caribbean basin - such as Belize, the Bahamas, Suriname, and Guyana, may be partial to selective immigration policies. These countries, in marked contrast with other small republics in this area, have unoccupied territories and

low population densities and as with other nations, skilled labor is in short supply. The Bahamas for a time allowed foreigners to enter the country freely; after 1967, however, restrictive policies were imposed following the establishment of a nationalistic government (Segal, 1975b). Some discussion of the desirability of selective immigration to Guyana has been noted in the literature (Mandle, 1975).

The policies of selective immigration pursued by Latin American countries have not been very successful. Most countries in the region only receive a trickle of skilled migrants. In recent decades only Argentina, Brazil, and Venezuela were successful in enticing large numbers of selected migrants. Thousands of Europeans came into Argentina (Lattes, 1977), Brazil (Merrick and Graham, 1979), and Venezuela (Chen and Picouet, 1979) immediately after the Second World War and during the 1950's. Brazil up to this day continues to attract substantial numbers of skilled migrants although Argentina does not. Sizable numbers of skilled migrants from Europe, North America, and many Latin American countries have entered Venezuela since the present period of economic expansion which began in the mid-1970's (Chen and Picouet, 1979; Sassen-Koob, 1979). The creation of an agency for the recruitment of foreign workers, the signing of labor import agreements between Venezuela and Spain and Portugal, and the implementation of a labor migration agreement among members of the Andean Pact assure that selective immigration into Venezuela will continue for the foreseeable future (Sassen-Koob, 1979).

Evidence on selective immigration policies and their results suggest that these policies should be expected to have only limited success in future attempts to entice foreign skilled migrants to Latin American countries, although it is highly likely that selective migration within the region will continue to be important and may even increase. Only Venezuela, now experiencing an oil-induced economic boom, Brazil and perhaps Ecuador and Argentina may be able to attract skilled immigrants from developed countries in and beyond the Western Hemisphere.

Latin American countries will continue trying to attract selected groups of immigrants from places not likely to have been considered in years past, but who may be able to provide skills in high demand and be willing to settle in sparsely populated areas. During the 1960's, for example, a few thousand Japanese immigrants settled in the Argentinian province of Misiones (Solberg, 1978). Japanese and Mennonite colonists (originating from Canada and Mexico) arrived in Bolivia in 1956 and 1962, respectively (UNFPA and Bolivia: Ministerio de Planeamiento y Coordinación, 1979). In 1959, Paraguay and Japan entered into an agreement by which 85,000 migrants from the latter country would settle in Paraguay over a 30-year period (Pidoux de Drachemberg, 1975). The well-publized 1979 macabre Jonestown incident in Guyana illustrated the willingness of the country to accept colonizers from outside its national borders. A recent report confirms that Bolivia was considering providing a home for as many as 30,000 white families from Southern Rhodesia,

South Africa, and Namibia; more recently, migrants from El Salvador have been authorized to settle in Bolivia (May, 1979). These migrants, presumably, would contribute to the rural development of Bolivia since they are skilled in tropical agriculture.

But not all countries may be willing or ready to accept large numbers of immigrant colonies. Chile is reported to have refused offers by the Japanese and Rhodesian governments to embark on planned immigration schemes involving their natives. Concern about excessive pressures on already strained facilities and services and political opposition by local groups in Southern Chile fearing a "foreign" takeover were important factors influencing the negative Chilean response. (Personal communication).

SELECTIVE EMIGRATION POLICIES

Most countries in the region are opposed to the emigration of professional and skilled workers. Their departure is perceived as negative since other countries will benefit from the training received by these individuals at the expense of the sending countries, but more importantly because the "know-how" of the emigrants - often in short supply - will not be available to aid the socio-economic development of their countries of birth (Torrado, 1979a and Segal, 1975a present representative views).

The brain drain problem is serious in most countries of the region. Skilled workers emigrate primarily to developed countries, but also to other countries in the region. In the Caribbean, Segal (1975a:11) notes that "the poorer islands

export labor to their richer neighbors, and the richer islands export skilled labor to North America, England, and Western Europe". In South America, aside from emigrating to developed countries, "...highly skilled professionals are increasingly forming part of the [intra-regional migration] streams. The political upheavals during the 1960's and 1970's in Chile, Argentina, and Uruguay stimulated considerable out-migration of social scientists and other professionals. Many of the skilled migrants are reported to have entered Venezuela, Mexico, Brazil, and Ecuador, in addition to other countries outside South America" (Kritz and Gurak, 1979:412). Skilled workers from Perú, Colombia, and the Dominican Republic, to cite other examples, are also reportedly migrating in large numbers to Venezuela. Similarly, tens of thousands of professional, technical, and skilled workers left Cuba over the last two decades. Many of them have settled in Venezuela, Costa Rica, and other Central American countries.

The perception of the brain drain problem, however, has seldom resulted in the development of policies with enough "persuasive" power or sufficient incentives to stop or reverse the emigration flows. This may be largely because most governments in the region regard with disfavor - or even as politically unacceptable - the enforcement of tight emigration regulations. Only Cuba "has taken a firm stand in opposition to selective emigration" (United Nations, 1977a:31) by denying exit permits to skilled applicants. Haiti has reportedly (Torrado, 1979a) imposed legal restrictions on the emigration of skilled personnel,

though some analysts suggest that it is done not as a population policy, but as a "business whereby the Haitian government seeks to extract, whether from the educated elite or the unskilled laborer seeking to leave the country, a substantial sum of money" (Segal, 1975b:197). Some countries, like Jamaica, have attempted other measures, such as student bonding, with limited success (Ebanks, 1975b).

A few countries, notably Barbados, do not regard emigration of skilled workers as necessarily detrimental. Barbadian policy has, for years, stimulated emigration across the board - regardless of skill levels - by providing financial assistance to would-be migrants and by seeking new migration opportunities and destinations. The government is on record as being willing to further emigration by helping those wishing to leave acquire skills in high demand in receiving countries (D. Marshall, 1979). The relatively high educational levels of Barbados' population partly explain this unique position, but other factors have helped shape this policy. Among these are the substantial role played by migrants' remittances in the country's economy and the fact that in spite of reduced fertility, the government "has not been able to solve its unemployment and underemployment problems" (Ebanks, 1975a:35).

Almost every country has made attempts to entice migrants abroad to return home, but not with much success. Elements of these policies include recruitment of emigrants by private and official agencies for job opportunities in sending

countries, suspension of custom duties for return migrants, and the promise of better salaries and improved working conditions (Andrews, 1975; Torrado, 1979a). These policies, in Latin America and other parts of the developing world, have failed because they are not forcefully pursued or because they fall short of modifying the basic conditions that promote emigration (Glaser, 1978).

Policies to influence the levels of emigration of professional and skilled workers, in brief, have fared poorly and their consequences have been minimal. Almost without exception, restrictions imposed on immigration by receiving countries have a more pronounced effect in altering the volume and direction of emigration of skilled personnel than policies enacted by sending countries.

INTRA-REGIONAL LABOR MIGRATION POLICIES

Evaluating governmental perceptions of intra-regional labor migration is difficult since there are strong indications that explicit migration policies do not always agree with, and frequently run counter to, dominant and persistent - yet poorly articulated - patterns of official action. In the first place, policies to influence intra-regional labor migration, with few exceptions, have not been priority items on the agendas of either the sending or receiving countries. Host countries seemed to have developed their immigration policies in a haphazard manner, largely in reaction to short term situations without considering

long term consequences or the interaction of immigration flows with basic social and economic forces. In other situations, particularly in the case of sending countries, the absence of policies define, by default, an implicit course of action - or inaction - which may be euphemistically taken as a population policy.

If any action is taken, the standard approach of governments in the region in coping with the issues posed by limitrophe migrations has been for the receiving country to enact a series of regulations concerning under what conditions foreigners may live in their country, or have entered in bilateral labor agreements with sending countries. These agreements seek to regulate migrations mainly by providing to the migrants entry and/or work permits as well as controlling for the number of individuals admitted in receiving countries, and by protecting the human and labor rights of migrants in host countries (ILO, 1974b; Matetic, 1972). In essence, the origin of these labor agreements can be traced to different sets of concerns in sending and receiving countries. The principal concern of sending countries is to make every effort to protect the well-being of its citizens while living and working abroad. For receiving countries, the main issue is centered around who enters the country and for what purpose. Preoccupations dealing with national security (foreigners encroaching upon the receiving country's frontier areas or refusing to be assimilated by the host culture), or of limited opportunities for their own

nationals at home has led receiving countries, as a rule, to place heavy emphasis on regulation. Thus, immigration policy has been approached, in a sense, as a police action. Sending countries, on the other hand, have historically taken a more passive stand since they are relatively powerless to influence events and have regarded the emigration of unskilled workers, at least implicitly, as beneficial.

Unskilled Labor Immigration Policies

At the explicit level, most governments in the region oppose the immigration of unskilled and semi-skilled laborers, especially if it is illegal and uncontrolled. Half of the countries (of a total of 18) included by Torrado (1979a) in her analysis of Latin American migration policies (using data from the United Nations' Third Inquiry among Governments on Population and Development) stated a lack of desire for unskilled migrants from limitrophe countries. Although they are among the main recipients of Latin American laborers, Argentina, Venezuela, and the Dominican Republic were among these nations. The other countries included in the analysis indicated that they did not have explicit policies regarding this matter.

Caribbean countries, not included in Torrado's review, also appear to fit this pattern of opposition to the immigration of unskilled laborers. D. Marshall (no date 'a') has described the opposition of the Bahamian government to immigration of unskilled workers from Haiti, while Segal (1975a) notes that the newly acquired independence of the Caribbean

states has further restricted intra-regional moves of this type. The government of Trinidad and Tobago is reported to be considering exerting greater control over immigration, both legal and illegal, as well as over the entry of temporary workers (United Nations, 1978c). It has been suggested that the issue of free movement of labor was one "of the principal sources of disagreement and conflict among the various governments which participated in the West Indies Federation" and one of the primary causes contributing to its demise (Chernick, 1978).

But in many countries of the region, the correspondence between explicit policies, when articulated, and practice has been poor. Countries facing chronic labor shortages or at least shortages in selected sectors of their economies have tolerated, if not encouraged, the spontaneous and largely uncontrolled immigration of workers from neighboring countries. Unskilled laborers facing dire prospects at home, eagerly emigrate to other countries where, commonly, they are willing to do jobs shunned by native workers and for lower pay. Powerful interests in the agricultural and industrial sectors of the receiving economies find it to their advantage to perpetuate this immigration since it provides an abundant pool of cheap labor.

In some countries, opposition to unskilled immigration seems to be strongest when it involves permanent settlement while it is officially sanctioned if it is of a temporary nature and helps correct seasonal or short-term manpower shortages. In

countries like Argentina and the Dominican Republic, a great many seasonal migrants are issued limited work permits and enter legally, although other workers arrive undocumented. Frequently, migrants holding short-term legal work permits stay beyond their time limits and thus, join the illegal foreign population. Practically all foreign unskilled workers enter other countries illegally. This appears to be the case throughout Middle America and among Haitian migrants to the Bahamas.

Governments of receiving countries, generally allied to powerful national economic interests, usually make only half-hearted efforts to solve the illegal immigration situation since they unevenly enforce the regulatory clauses of immigration statutes. In part, this may be because there is a belief that efforts to restrict spontaneous migrations "through controls only increases the clandestine or illegal migration" (de Villegas, 1977:60), although the high proportion of illegal migrants in Latin America make this assumption questionable.

During the 1960's, for example, perhaps as many as 1,500,000 immigrants from neighboring countries were residing in Argentina. "As in previous decades at least 60 percent came illegally and the government continued to tolerate them" in part, at least, because "private economic interests tacitly supported the illegal immigration, whose members did not unionize, were not covered by labor legislation, and worked for low wages" (Solberg, 1978:161). Didone (1979) has repeatedly denounced a strikingly similar situation in Venezuela. In Central America,

seasonal migratory rural workers are known to be subject to economic discrimination because of their illegal status (CSUCA/PCCS, 1978). In the Dominican Republic, large sugar plantations take advantage of illegal Haitian seasonal migrants, often in connivance with the authorities of both countries (Glaessel-Brown, 1979).

Another peculiar, but convenient feature of how governments in the region have approached the issue of immigration from neighboring countries is the flexibility displayed by the authorities in applying regulations to serve their perceived needs. Control over the migratory flows, except under very special circumstances, is never complete. Most of the countries have sufficient means at their disposal - border controls, deportations, etc. - to have some influence on the volume of immigration. These controls are determined to a great extent by economic forces which are further strengthened by market mechanisms. These market mechanisms fix how much of the migrant labor supply can be absorbed by the receiving economies at any given time, depending upon the prevailing employment and wage levels.

Regulatory mechanisms seem to improve or deteriorate systematically according to the needs of the host states. They are relaxed when industry clamors for more labor, tightened when so required by poor economic or social conditions. Venezuela, for example, disregards substantial increases in the number of undocumented Colombian immigrants if it believes that

their removal or normalization of their status would negatively affect national development plans by increasing the cost of labor (Didone, 1979). Honduras begins to expel Salvadorian migrants when it becomes convenient to do so in order to alleviate social pressures (Durham, 1979).

Ecuador selectivity enforces its statutes against illegal immigration according to the economic interests of the country. Law enforcement against undocumented Colombian immigrants is more rigorous in settled regions than in jungle areas since it is in these latter places where their work contributes to the expansion of the country's agricultural frontier (Pi Hugarte, 1979a:78). Argentina seized and deported a few hundred undocumented Chilean migrants while both countries were involved in the Beagle Channel conflict, thus informing Chile that it was taking a tough stand (ICMC, 1979a).

Finally, official corruption occassionally renders immigration regulation ineffectual; consular and enforcement officials engage in illegal practices, such as selling visas or allowing undocumented migrants to filter through frontier posts. Mention has already been made in this paper of what has reportedly occurred along the Haitian-Dominican border. Corrupt practices are also known to be associated with immigration into Venezuela, a country which migrants from all over the region are trying to reach (various issues of CEPAM, 1978-79, provide summaries of some of these incidents).

In short, as this review suggests, policies toward

unskilled immigration in Latin America have been primarily concerned with the regulation of these flows. The enforcement of these regulations appears to have been most effective in the non-Latin Caribbean area (with the exclusion of the Bahamas), but to have been very lax throughout the rest of the region. For many countries, considerations of an economic nature (abundant cheap labor) have made desirable the implementation of unofficial policies that tolerate and condone the often illegal entry of unskilled migrants from neighboring countries. This practical approach to unskilled immigration has been characterized by remarkable flexibility and can conveniently adapt to changing circumstances. Unskilled immigration policies have been only rarely devised, or even conceptualized, as part of a broader policy of socio-economic development.

Argentina: A Broadly Designed Migration Policy?

One exception that merits some attention is Argentina. On several occasions, the Argentinian government has attempted to ameliorate, if not to solve, the illegal immigration problem. Actions with a legal orientation, such as the granting of amnesties to illegal migrants by which they could legalize their status, were taken on an irregular basis but the number of illegal migrants continued to increase. Perhaps, as it has been suggested, because civil servants for their own idiosyncratic reasons did not give full support to the amnesty program, or because the procedures were so complicated or expensive

that many migrants could not avail themselves of the opportunity. (Personal communication). During the early 1970's, however, Mármora (no date) suggests that Argentina embarked on an effort to forge ahead on an immigration policy which departed from previous policies whose exclusive concern was the regulation of immigration. Under this policy, migrants from limitrophe countries were to be fully incorporated into Argentina's social and economic life while simultaneously fulfilling important economic and demographic roles, within an overall frame of regional economic integration.

While the complete outline of the new policy has not, to my knowledge, been fully documented, it is possible to piece together some of its main strands. Immigration from neighboring countries was to be explicitly integrated with broader development plans. Economic integration was seen as favoring sending and receiving countries alike since it would supposedly accelerate the pace of economic growth in all countries (through increased trade, more economic cooperation, etc). Sending countries would be better able to ensure the protection of their nationals in Argentina, and it would facilitate the transfer of properly documented workers from these countries to Argentina's economic sectors experiencing manpower shortages.

At a demographic level, a complementary role was assigned to economic integration. Countries like Paraguay and Bolivia, and to a lesser extent Chile, were experiencing population growth rates higher than their rates of job creation. Argentina, on the other hand, had a low rate of natural increase,

was no longer receiving extra-continental migrants in sufficient numbers, and labor demand consistently exceeded labor supply. Hence, Argentina needed the labor that its neighbor could supply.

Argentina's ability to absorb manpower surpluses from limitrophe countries would provide these countries with the time needed to bring their population growth rates in line with their rates of economic growth. Sending countries were gaining, thus, additional time to develop their social and economic infrastructures. Labor integration provided a viable alternative to the establishment of family planning programs in the region over the long run. Fertility rates would decline as they did in Argentina, as the sending countries began to experience socio-economic change.

In part, Argentina's new labor migration approach was an attempt to formalize what in fact had been occurring for some time since hundreds of thousands of migrants from limitrophe countries were in the country. It also came about because it was realized that immigration policies which in the past had been effective no longer were producing wanted results. The new migration policy departed from earlier views that considered limitrophe migration as tolerable only if European immigrants were not arriving in sufficient numbers. It did, as it were, officially recognize that the age of voluminous European immigration was over, and that Argentina still needed immigrants to fill a rich and relatively "underpopulated"

policies favor the acceptance of migrants from neighboring countries as long as they meet certain standards; government officials note that the standards have been reviewed so as to admit applicants with lesser qualifications.

Some observers claim, however, that Argentina's policies have never been, in fact, changed. The volume of limitrophe immigration continues to be manipulated as it has been throughout this century according to the needs of the country. What changes, Rivarola and his associates (1979) claim, is the perception of those needs. At any given time, they depend on the competing strength of economic, military, and political pressure groups within Argentina and on the prevailing social and economic conditions.

Unskilled Labor Emigration Policies

Although it may be assumed that many governments in Latin America have favorably regarded the voluntary emigration of unskilled workers from countries where unemployment levels are high, few governments have openly acknowledged it. This is more apparent among the bigger, richer South American countries having lower population density. In many of the smaller Caribbean countries, population pressures on existing resources are frequently cited as impediments to development, and governments openly admit to viewing emigration as a safety valve which helps ease social and economic pressures. Some of these countries (i.e., Barbados, Jamaica) have even instituted mechanisms to facilitate the emigration of their nationals (Segal, 1975a).

Torrado (1979a) in her analysis of government replies to the United Nations' questionnaire found that although over half (10 out of 18) of the countries considered the emigration of unskilled labor significant, only Colombia had definite policies to regularize it. Mexico reported that it was interested in developing mechanisms to regularize labor emigration, while Haiti and the Dominican Republic regarded unskilled labor emigration as favorable. Other governments indicated that they had no specific policies and did not hamper the emigration of their unskilled citizens. Few sending countries, as may be surmized, have attempted to influence migration processes, and when they have, their policies have been almost exclusively concerned with the protection of their citizens' rights in receiving countries.

Colombia's migration policies are an exception. The labor migration policies initiated by Colombia in 1975 are unique not only because they are one of the first attempts at dealing comprehensively with the problem, but also because these policies are regarded as part of a broader scheme of socio-economic development (SENALDE, 1976; Mármora, 1976b and 1979). Although Argentina as a receiving country had embarked on an effort to integrate labor migration into its development planning during the early 1970's, Colombia appears to be the first labor sending country to follow a similar approach.

The most significant feature of the Colombian perspective is that it conceives of international labor migration as an

extension of migratory movements within Colombia. Both population movements are assumed to involve migrants with the same basic characteristics and to be fundamentally determined by the same causes. The basic premise of the policy is "that emigration results from push factors in the place of origin, particularly from the inability of the productive structure to absorb all available manpower" (Mármora, 1979:445). The goals of the labor migration policies are to retain as many potential migrants as possible in places of origin and to assist eventual migrants in finding satisfactory employment in their places of destinations, both within and outside Colombia. These goals are to be achieved by the implementation of programs geared to the retention of potential migrants, the channeling and regularization of migratory flows, and the provision of social and employment assistance to the migrating laborer and his family (Mármora, 1979).

Specific mechanisms have been developed to implement the labor migration policies. Five Border Offices for Employment and Labor Migration, for example, have been established on Colombia's borders with Venezuela, Ecuador, Brazil, and Peru. These offices complement similar offices organized within Colombia by the National Employment Service (SENALDE). SENALDE routinely evaluates employment conditions in different parts of Colombia and helps channel workers seeking employment to regions in the country where there is a demand for labor. The frontier offices assist return migrants arriving from neighboring countries in obtaining employment in Colombia, and if required,

provide returning migrants with certain social services. These programs place special emphasis on assuring that migrants, both in Colombia and other countries, have their human and labor rights protected. To further protect these rights, Colombia has or is negotiating bilateral and multi-national labor agreements with surrounding countries.

Detailed studies of Colombian regions experiencing high emigration have been commissioned (see for example Pi Hugarte, 1979a and 1979b; Torales, 1978). These studies assist planners in determining what conditions lead to out-migration and are used to introduce changes, such as rural development projects, that may arrest further population displacements. Rural development programs focus on the establishment of cooperatives and on the "creation of jobs at low cost and utilization of appropriate technologies requiring small investments" (Mármora, 1979:449).

Colombia's new policy of labor migration can be seen in better perspective when placed within the general frame of economic integration being pursued by member countries of the Andean Pact (Bolivia, Colombia, Ecuador, Peru, and Venezuela). An important element of the Andean Pact is a labor agreement (the Convenio Simon Rodriguez) that "approaches the migration problem through employment and human resources planning, manpower training, social security, and other labor and social aspects" while giving priority "to the establishment of a system which would facilitate labor mobility within the sub-region" (de Villegas, 1977:60).

The role of labor migration in economic integration is crucial since during its initial stages, there is a tendency for regional economic differentials to intensify as the countries endowed with superior technology and other physical and human resources can make better use of expanded markets. In this context, labor migration has a corrective influence which eases the burden that less developed countries within the region would have to carry since they can, at least temporarily, export some of their surplus labor to the more privileged countries. The labor agreement aspects of the Andean Pact provide an ideal arrangement within which Colombia could implement its labor migration policy since for it to be effective, close cooperation is required between the sending and receiving countries. It goes without saying that an added benefit of the Andean Pact is that it formalizes a process of *de facto* labor integration between Colombia and Venezuela.

Other attempts at economic integration in the region, it should be pointed out, have not included such ambitious plans for labor migration. The issue of labor migration was, precisely, one of the factors which led to the collapse of the West Indian Federation (since some countries favored free labor migrations while others opposed it) and contributed to aggravate tensions between El Salvador and Honduras, both member countries of the Central American Common Market, just prior to their conflict in 1969. A negative perception of free labor migration for many countries in the region (although as we have seen tolerating

clandestine migration), often just slightly better off than their neighbors, is understandable given the high levels of open unemployment and underemployment prevalent in much of Latin America. Yet, it is interesting to see that the two most comprehensive attempts at dealing with problems posed by international labor migrations have been undertaken by countries (Argentina and its neighbors; Colombia and Venezuela) that have considered them, whether formally or informally, as part of a broader process of regional economic integration.

There are signs that Latin America countries with severe problems of labor absorption will take advantage of emerging new opportunities to export labor under special conditions to destinations not previously considered or available. A recent report indicates that Jamaica and Venezuela (CEPAM, II, 8, 1979) entered into an agreement by which temporary Jamaican agricultural workers went to Venezuela. This experiment ended in failure when both sides charged the other with violating the conditions of the agreement. Mexico, Colombia, Nicaragua, and El Salvador are reported to be in various stages of negotiating labor agreements with Saudi Arabia (CEPAM, I, 7, 1978 and II, 9, 1979; Mármora, 1979). According to these agreements, selected groups of workers would go to Saudi Arabia for fixed periods of time and under special working conditions. El Salvador, as noted before, may send thousands of settlers to Bolivia following an accord reached under international auspices (May, 1978).

The evidence discussed here shows that comprehensive policies on labor emigration are just beginning to emerge in Latin America. This approach originates from increased attempts by countries in the area to incorporate social and manpower concerns into long range development plans. Traditional preoccupations with the welfare of the migrant workers in other countries will continue to dominate the policies of the sending countries, while efforts are likely to be made towards a more rational allocation of human resources within and outside the countries of emigration. In the future these two objectives should increasingly play a complementary role.

SUMMARY AND SUGGESTIONS FOR NEEDED RESEARCH

The evidence reviewed in this report demonstrates that relatively little is known about international migration within the Caribbean, Middle America, and South America. The dearth of information is not, however, pervasive in all parts of the region. Relatively more is known about international migration flows in the Southern Cone and about emigration from Colombia to Venezuela, both areas in which the volume of migration is considerable, than about other movements in the Latin American region. Some understanding about what is taking place elsewhere emerges through a limited number of studies that have examined certain features of international migration in selected countries. Haitian migration to the Bahamas and the Dominican Republic, Salvadorian emigration to Honduras, and the more recent immigration of Brazilians to Paraguay are notable examples of migration movements analyzed in these studies.

In recent decades, Latin American international migrations have been quantitatively more significant into Venezuela and Argentina, although other important migrations have been registered from El Salvador into neighboring countries, especially Honduras. The major exporters of regional international migrations, in addition to El Salvador, are Paraguay, Bolivia, Chile, Uruguay, and Colombia. International migrations are commonplace across borders of adjoining countries, but appear to be of small

significance in the Caribbean area, except from Haiti to the Bahamas and the Dominican Republic, and some other minor flows. There are indications that international migrations oriented toward Venezuela from many countries in the region are on the increase. Available statistics do not permit estimating with certainty the extent of intra-Latin American migration, but the number is certainly in the millions and apparently on the rise, at least in some countries.

Most studies of international migration within the region have been concerned with the analysis of migration from the perspective of, or at least relying on data obtained from, the receiving countries. Largely because of the availability of a few studies that focus on countries of origin, it is possible to identify with some certainty which are some of the most important causes of international migration. Our understanding is far from being comprehensive since the evidence available is insufficient to make valid and broad generalizations.

In general, international migrations within Latin American appear to respond to the same basic forces as internal migration, these being of an economic nature and strongly influenced by structural features of these societies. International migrations, furthermore, also appear to be mediated by forces of a very peculiar character to which internal migrations are not subjected or at least not to such an extent. Notorious examples are currency exchange differentials between countries, legal restrictions, and political unstability (refugees, exiles).

A basic idea of the most important characteristics of intra-regional migrants emerges from the studies reviewed here, but only at the most general level. As with many internal migrants, most international migrants appear to be young, poorly educated, and unskilled workers that leave their countries in search of work. Not much more can be said, however, since international migrants in Latin America cover the gamut of socio-economic characteristics. International migrations within Latin America are so varied, and so are the migrants participating in them, that no single description can equitably be used. Developing a comprehensive and useful typology of international migrants in the region would, by itself, go a long way towards making a very complex process more understandable.

The biggest questions remain, however, about the consequences of international migrations. Aside from some basic knowledge readily ascertained through the analysis of aggregate data, such as changes in the size, composition, and growth rates of the population, not much else is really known.

Contrary to the situation with internal migration, there are not many studies from which one can make generalizations concerning how migrants fare in countries of destination. A few surveys from Argentina, data collected of Colombian deportees from Ecuador and Venezuela, data on Salvadorian residents in Honduras, and some surveys of Haitian migrants in the Dominican Republic and the Bahamas - some of them highly unrepresentative

of the universe of migrants - do not provide sufficient grounds to explore in depth the problems that international migrants confront. Nor do they permit evaluating how they contribute to the well-being of the host society, and at what cost.

Almost nothing has been found in this review about how emigration affects the countries of origin, except for some studies dealing with Paraguay and Uruguay. Speculations abound on a very general level, but they are not based on empirical studies. Important questions to be investigated are, for example, how return migrants contribute to social change, if at all, or if migration promotes social stagnation by helping social structures survive which would, in its absence, collapse. How important are remittances to the economy of local rural areas? Are they voluminous enough to make a significant difference in areas where migrants come from, or do they make only a marginal contribution to the local economy? Does migration open new cultural horizons, or, as has been suggested for the Caribbean, breed cultural impoverishment? Are fertility norms affected by migration or return migration?

Information about migration policies in the region is very limited; detailed accounts can only be obtained for a few countries. This may be partly because there have been few explicit policies to speak of, or simply because the legal measures conventionally treated as migration policies seldom had any real relevance at the policy-making level. This situation is likely to change in the future as more and more governments continue

to incorporate manpower utilization considerations in their plans for social and economic development. Realistically, it should be expected that greater importance will be given to these policies by countries experiencing significant population displacements (internal or external).

In the face of so little knowledge about issues as complicated as those associated with international migrations within Latin America, it is difficult to suggest research areas that should receive priority. The ones described below appear to be among the most critical and relevant for development planning.

(1). The development of new techniques to measure international migration would constitute a significant contribution to our future understanding of the problem. Census counts in countries of destination consistently understate the true number of immigrants, do not take into account seasonal or short-term migrations, and rapidly become out-of-date. Ideally, novel measurement approaches could be included in relatively economical, large-scale national sample surveys that would permit frequent updating of the estimates, but that could also be used in the censuses. Promising work in this direction has already been done in some surveys in countries of emigration. The measurement tools in these surveys are questions that elicit information about relatives of the respondents that emigrated (Somoza, 1979). With these data it is possible to obtain estimates

of the number of emigrants and some of their characteristics.

(2). More detailed field studies should be undertaken in places of origin of international migrants. A few carefully done studies in rural areas of origin, for example, could make a great contribution towards specifying under what conditions migration takes place. They would provide answers to questions such as why do some people migrate across international borders while others do not, or go to cities within their own countries? Why do some migrants go away for short periods of time while others do so on a permanent basis? What impact do seasonal migrations of different durations have on the migrants and on the areas of origin when they return? Do they differentially affect the pace of social change or introduction of agricultural innovation (through different rates of savings accumulations, attitudinal changes, etc.), for example? How do potential migrants become aware of opportunities elsewhere? Do certain social and economic changes increase the probability of emigration while others do not? In what way do population growth rates interact with these changes? Answers to these questions would provide a better understanding of why international migrations take place, and just as importantly, would significantly increase our knowledge about the causes of internal migration. The frequently cited study by Durham (1979) of Salvadorian emigration to Honduras is an

excellent example of what detailed case studies encompassing careful examination of social and economic structures at a micro-level could yield. Less ambitious but equally useful studies have been completed or are underway in Colombia (Pi Hugarte, 1979a and 1979b; Torales, 1978).

(3). Knowledge about the effects of remittances from international migrants on their places of origin is practically non-existent. Studies at the most aggregate level based upon national banking, monetary, and foreign exchange statistics would by themselves be useful in providing at least a partial view of the importance of remittances in some countries. At a micro level, studies of remittances could concentrate on their impact at the village and household levels, and on how they are allocated among competing needs. Field work would obviously be required.

(4). More should be known about the adaptation process of international migrants in countries of destination. Do legal requirements influence the permanance of a migrant's move? Do they face more difficulties or different kinds of problems than national internal migrants when moving to rural or metropolitan areas of receiving countries? What are some of the most important characteristics of the migratory process? Do international migrants arriving in metropolitan areas do so directly or in stages? Detailed survey studies or special census tabulations would be required to investigate these issues.

(5). There is a pressing need for detailed country studies of the decision-making process on the part of governments regarding international migrations across bordering countries, especially for countries of immigration. What considerations are taken into account by policy makers when formulating explicit or implicit immigration policies? How are factors such as national security, labor needs, increased pressures on social services, etc. weighted when making decisions? What influence do labor unions, private businesses and other pressure groups have on the policy makers? Insights into these issues would assist in the formulation of policy and would also be helpful in the design of broader development plans.

(6). Countries of immigration and emigration would benefit from studies that investigate the effects of international migration on population and labor force structures. These analyses would be of great utility to planners in allocating resources and setting socio-economic targets. They will also aid in the preparation of population projections and the evaluation of changes in vital rates.

(7). Finally, it would be desirable to assess what measures could be undertaken to minimize the incidence of undocumented migration. What mechanisms, for instance, could be developed to legalize the coming into a country of short-term unskilled workers? Could political and administrative actions be used to minimize the exploitation of foreign

workers by unscrupulous employers? How can governments of sending and receiving countries best cooperate to achieve these ends? The Colombian experience in these matters should provide answers to some of these questions.

TABLE 1 - INTRA-REGIONAL INTERNATIONAL MIGRATION ESTIMATES FOR SELECTED LATIN AMERICAN COUNTRIES, BY COUNTRY OF RESIDENCE

REGION/ RECEIVING COUNTRY NAME	SENDING COUNTRY NAME	(1) CENSUS ESTIMATE (for most current available year) 1/ YEAR	ESTIMATE	(2) INTERNATIONAL LABOUR OFFICE ESTIMATE 2/ 1974	(3) OTHER INFORMATION
SOUTH AMERICA					
Argentina	Bolivia	1970	101,000 a/	500,000	Mármora (1975) reports the following estimates for the year 1973:
	Brazil		48,600	70,000	
	Chile		142,150	350,000	
	Paraguay		230,050	600,000	
	Uruguay		58,300	80,000	

Bolivia	178,055
Brazil	76,843
Chile	200,554
Paraguay	470,416
Uruguay	71,161

It appears that these estimates, considerably higher than those given by the 1970 census, may have been partially based on the surveys of immigrants carried out by the Oficina Sectorial de Desarrollo de Recursos Humanos (circa 1973).

ICMC Migration News (Jan.-March 1979) gives the following estimates of migration in Argentina for about 1978.

Bolivia	650,000
Brazil	200,000
Chile	700,000
Paraguay	700,000
Uruguay	400,000

The bases for these estimates are not stated, and they definitely appear to exaggerate the actual number of migrants in comparison with the other estimates cited.

De Sierra (1975) presents an estimate of Uruguayan emigration to Argentina between 1970 and 1975 of 124,700. This estimate which appears plausible when added to the Uruguayan population enumerated in the 1970 Argentinian census would give an estimate of well over 150,000 Uruguayans residing in Argentina in 1975.

TABLE 1 - (continued...)

REGION/ RECEIVING COUNTRY NAME	SENDING COUNTRY NAME	(1) CENSUS ESTIMATE (for most current available year) 1/ YEAR	ESTIMATE	(2) INTERNATIONAL LABOUR OFFICE ESTIMATE 4/ 1974	(3) OTHER INFORMATION
Argentina (continued)					The United Nations Fund for Population Activities (UNFPA) and the Bolivian Ministerio de Planeamiento y Coordinacion (1979)assume that 212,333 Bolivians were in Argentina in 1968. The range of estimates is very wide, but it seems certain that the census figures are too low. The ILO estimates may be closer to reality at about mid-decade.
Bolivia	Argentina	1950 a/	3,278		A recent report, (source: Migration Today, 1977), puts the number of Chilean migrants in Bolivia at 18,800.
	Brazil		4,682	2,000	
	Chile		3,964	5,000	
	Peru		10,269	35,000	
Brazil	Argentina	1970 3/ a/	14,536		Colombians and nationals of other countries bordering on Brazil are reportedly found scattered along frontier regions.
	Bolivia		9,945	45,000	
	Chile		1,767		
	Paraguay		18,632	70,000	
	Peru		2,141		
	Uruguay		11,293	3,000	
Chile	Argentina	1970 a/	13,270	3,000	A source dealing with Bolivian migration (UNFPA and Bolivia: Ministerio de Planeamiento y Coordinacion, 1979) assumes that 53,992 Bolivians were in Chile in 1968, an estimate more in line with the ILO assessment than what the Chilean census suggests. There are reports of significant seasonal and permanent migrations of Bolivians into Northern Chile, as well as information of similar moves into the same areas of Chile and in the same way by Peruvians.
	Bolivia		7,563	70,000	
	Colombia		800	7,000	
	Ecuador		967	8,000	
	Peru		3,804	0,000	
	Venezuela		388	5,000	
Colombia	Argentina	1964 a/	1,190		It is reported that many migrants from Ecuador have been returning home in recent years. The 1973 census enumerated 64,673 foreign born persons in Colombia in 1973, or about 10,000 less than in 1964. However, these figures refer to foreign born originating in Latin America as well as outside this region.
	Bolivia			4,000	
	Brazil		2,267	5,000	
	Ecuador		10,126	60,000	
	Panama		2,208		
	Peru		1,455	4,000	
	Venezuela		16,224	33,000	

TABLE 1 - (continued...)

REGION/ RECEIVING COUNTRY NAME	SENDING COUNTRY NAME	(1) CENSUS ESTIMATE (for most current available year) 1/ YEAR	ESTIMATE	(2) INTERNATIONAL LABOUR OFFICE ESTIMATE 2/ 1974	(3) OTHER INFORMATION
Colombia (continued)					Somoza (1979) utilizing some new estimating techniques concludes that 650,000 persons had left Colombia by mid-1978. This figure is two times as high as the 278,000 emigrants which CELADE reports were enumerated in 21 countries circa 1970.
Ecuador	Bolivia	1950 b/	29	4,000	Pi Hugarte (1979a) assumes that about 60,000 Colombians were in Ecuador in 1979.
	Brazil		24	20,000	
	Colombia		14,584	50,000	
	Peru		1,783	5,000	
	Colombia	1974	25,000		
Paraguay	Argentina	1972 a/	27,389	18,000	Partial results from small-scale surveys suggest that the number of Brazilians in Paraguay is much higher at present than it was in 1972 or estimated by ILO in 1974. By 1975 40,263 Brazilians were counted in just two departments of Paraguay (Secretaria Tecnica de Planificacion and CELADE, 1978). Some observers believe that the present number may be around 100,000 and possibly higher.
	Brazil		34,276	30,000	
	Uruguay		763		
Peru	Argentina	1972 a/	4,286		
	Bolivia		4,115	60,000	
	Brazil		3,077	5,000	
	Chile		7,525	10,000	
	Colombia		1,528	5,000	
	Ecuador		2,399	20,000	
Uruguay	Argentina	1975 a/	19,300	25,000	A number of Brazilians reportedly enter Uruguay on a seasonal basis during harvest time.
	Brazil		15,000	20,000	

TABLE 1 - (continued...)

REGION/ RECEIVING COUNTRY NAME	SENDING COUNTRY NAME	(1) CENSUS ESTIMATE (for most current available year) 1/ YEAR	ESTIMATE	(2) INTERNATIONAL LABOUR OFFICE ESTIMATE 2/ 1974	(3) OTHER INFORMATION
Venezuela	Argentina	1971[a/]	4,481	20,000	According to many reports immigration into Venezuela has dramatically accelerated in the past few years. The number of Colombians in the country between 1963 and 1973 was estimated by Arbelaez (1977) at 441,831 or over twice as many as enumerated in the 1971 census. This estimate may be accepted as a minimum. Official Colombian authorities believe that the number is currently at least twice as high, or near a million persons. Other "guess-estimates" of migration into Venezuela from Latin American countries in 1979 are as follows: from Colombia 1,200,000; from Ecuador 200,000; from Peru 200,000; and from the Dominican Republic 150,000. While these figures appear to be extreme, they suggest that immigration from some of these countries has increased in recent years. Many journalistic accounts provide information reinforcing the view that migrations into Venezuela from countries throughout Latin America are on the rise.
	Bolivia		1,166	10,000	
	Brazil		2,345	20,000	
	Colombia		177,973	600,000	
	Chile		2,999	20,000	
	Ecuador		5,292	20,000	
	Peru		2,168	20,000	
	Costa Rica		1,314		
	Panama		1,079		
	Mexico		1,717		
	Cuba		10,139		
	Dom. Republic		1,886		
	Trin. & Tob.		4,870	30,000	
MIDDLE AMERICA					
Costa Rica	Nicaragua	1973[4/a/]	23,347		
	Panama		4,210		
El Salvador	Guatemala	1971[a/]	3,413		
	Honduras		14,290		
Guatemala	El Salvador	1973[a/]	14,052		There are reports of seasonal migrations into Guatemala from Honduras and El Salvador. Some observers believe that migration from the latter country into Guatemala has increased since the expulsion of Salvadorians from Honduras in 1969.
	Honduras		6,231		
	Nicaragua		1,098		
	Mexico		3,196		

TABLE 1 - (continued...)

REGION/ RECEIVING COUNTRY NAME	SENDING COUNTRY NAME	(1) CENSUS ESTIMATE (for most current available year) 1/ YEAR	ESTIMATE	(2) INTERNATIONAL LABOUR OFFICE ESTIMATE 2/ 1974	(3) OTHER INFORMATION
Honduras	El Salvador	1961[b/]	38,002		The most quoted figure regarding the number of Salvadorian migrants in Honduras just prior to the 1969 war is 300,000. CSUCA/PCCS (1978) estimates on the basis of analysis of census figures from El Salvador, Guatemala, Nicaragua, and Honduras and implied survival ratios that emigration from El Salvador between 1961 and 1971 amounted to 241,323. On the basis of this figure and other stddies made in the region, CSUCA/PCCS concludes that in 1967 there were over 350,000 Salvadorians in Honduras. Jones (1976) in an elaborate and complex analysis of census figures and other data estimates that the maximum plausible number of Salvadorians that may have left Honduras after the 1969 war were 267,000. Other analysts believe that the number of Salvadorian migrants in Honduras before the war was greatly exaggerated. There are no data available that could be used to estimate the current number of Salvadorians in Honduras.
	Guatemala		4,497		
	Nicaragua		3,553		
Mexico	Argentina	1970[a/]	1,585		A number of sources provide estimates suggesting that from 15-50,000 Guatemalans migrate to Mexico as seasonal workers each year.
	Colombia		1,133		
	El Salvador		1,213		
	Guatemala		6,969		
	Nicaragua		3,674		
	Panama		1,183		
	Cuba		4,175		
Nicaragua	Costa Rica	1971[a/]	4,693		
	El Salvador		2,210		
	Honduras		6,[illegible]		
Panama	Colombia	1970[a/]	12,128		
	Ecuador		1,462		
	Costa Rica		3,825		
	Nicaragua		2,582		
	Cuba		1,140		
	Barbados		1,140		
	Jamaica		3,978		

TABLE 1 - (continued...)

REGION/ RECEIVING COUNTRY NAME	SENDING COUNTRY NAME	(1) CENSUS ESTIMATE (for most current available year) 1/ YEAR	ESTIMATE	(2) INTERNATIONAL LABOUR OFFICE ESTIMATE 1974 2/	(3) OTHER INFORMATION
CARIBBEAN					
Bahamas	Haiti	1970 5/a/	6,151		Marshall (no date 'a') reports that according to newspaper accounts, the number of Haitians in the Bahamas in 1974 was 40,000.
	Turks & Caicos		3,185		
	Jamaica		3,526		
Haiti	Cuba	1950 a/	3,052		
	Dom. Republic		13,352		
Dom. Republic	Haiti	1970 a/	19,065		Estimates on the number of Haitian migrants in the Dominican Republic cover a wide range. The most likely number appears to be somewhere around 100,000. A good discussion of the problems faced in estimating this migration flow may be found in Segal (1975d:211-212).
Jamaica	Panama	1960 a/	2,053		
	Cuba		4,266		
Trinidad & Tobago	Venezuela	1960 a/	3,388		

FOOTNOTES:

1/ Unless otherwise stated, the source for the census data was CELADE, Boletin Demográfico, Vol. 10, No. 20, July 1977, Table 2.

2/ ILO (International Labour Office), 1974a. "Seminario Regional Tripartito Sobre la Situación de los Trabajadores Migrantes en Sudamérica", Documento de Trabajo Num. 1. Buenos Aires, Argentina. (Mimeographed).

3/ 1970 Census of Brazil.

4/ 1973 Costa Rican census figures cited in A. Schmidt, "Los Extranjeros en Costa Rica", Comite Nacional de Población, August 1979.

5/ Bahamas Department of Statistics, Demographic Aspects of the Bahamian Population, 1901-1974. Nassau, Bahamas. 1976.

a/ Refers to country of birth.

b/ Refers to nationality.

TABLE 2 - SELECTED AGGREGATE ECONOMIC, SOCIAL, AND DEMOGRAPHIC INDICATORS FOR LATIN AMERICAN COUNTRIES (MOST CURRENT DATA)

REGION/ COUNTRY NAME	POPULATION ESTIMATE 1979 (MILLIONS) 1/	POPULATION LESS THAN 15 YEARS (%), 1979 1/	DEPENDENCY RATIO, 1979 2/	CRUDE BIRTH RATE, 1979 1/	CRUDE DEATH RATE, 1979 1/	RATE OF NATURAL INCREASE (%) 1979 1/3/	LIFE EXPECTANCY AT BIRTH (YEARS), 1979 1/	URBAN POPULATION (%) 1979 1/4/	PHYSICAL QUALITY OF LIFE INDEX (PQLI) 1/5/ 1979
SOUTH AMERICA									
Argentina	26.7	28	56.2	22	9	1.3	68	80	85
Bolivia	5.2	42	85.2	44	16	2.8	48	34	39
Brazil	118.7	41	78.6	36	8	2.8	61	61	66
Chile	11.0	35	66.7	24	8	1.6	63	79	79
Colombia	26.1	43	85.2	31	9	2.2	59	60	72
Ecuador	8.0	44	92.3	42	10	3.1	60	42	69
Guyana	0.8	44	92.3	27	7	2.0	68	40	84
Paraguay	3.0	45	92.3	39	8	3.1	62	40	75
Peru	17.3	44	88.7	40	12	2.8	55	62	65
Suriname	0.4	50	117.4	30	7	2.3	66	66	83
Uruguay	2.9	27	58.7	21	10	1.1	69	83	86
Venezuela	13.5	43	85.2	36	6	3.0	65	75	79
MIDDLE AMERICA									
Costa Rica	2.2	44	92.3	30	5	2.5	68	41	85
El Salvador	4.5	46	96.1	42	9	3.4	59	39	64
Guatemala	6.8	45	92.3	43	10	3.3	58	36	54
Honduras	3.1	48	104.1	47	12	3.5	55	31	53
Mexico	67.7	46	96.1	41	7	3.4	65	64	75
Nicaragua	2.5	48	104.1	47	12	3.4	53	49	55
Panama	1.9	43	80.7	29	6	2.3	68	50	79
CARIBBEAN									
Bahamas	0.2	44	88.7	25	5	2.0	69	58	84
Barbados	0.3	31	69.5	19	9	0.9	70	44	90
Cuba	9.9	37	72.4	20	6	1.4	71	64	85
Dominica	0.1	--	---	22	7	1.5	58	27	--
Dom. Republic	5.3	48	104.1	37	9	2.8	58	47	64
Grenada	0.1	--	--	27	6	2.2	63	15	78
Guadeloupe	0.3	37	75.4	17	6	1.1	68	48	81
Haiti	5.7	41	81.8	42.	16	2.6	47	23	40
Jamaica	2.2	46	108.3	30	7	2.3	69	41	85
Martinique	0.3	37	75.4	14	6	0.9	68	50	83
Neth. Antilles	0.3	38	75.4	28	7	2.2	62	48	82
Puerto Rico	3.5	35	77.8	23	6	1.7	72	62	90
Trin. & Tobago	1.1	38	72.4	25	7	1.8	67	49	85

TABLE 2 - (continued...)

REGION/ COUNTRY NAME	PER CAPITA GROSS NATIONAL PRODUCT ($) 1977 1/6/	POPULATION DENSITY PER SQ. KM OF TOTAL LAND 1970 7/	POPULATION DENSITY PER SQ. KM (100 HA) OF AGRICULTURAL LAND 1970 7/	TOTAL LABOR FORCE (1000's) 1970 8/	PERCENT OF LABOR FORCE IN AGRICULTURE 1970 8/	PERCENT OF LABOR FORCE IN INDUSTRY 1970 8/	PROJECTED LABOR FORCE INCREASE 1978-2000 (MILLIONS) 9/	ADULT LITERACY RATE (%) 1970 10/
SOUTH AMERICA								
Argentina	1,730	9.0	14.0	8,900	15.0	29.0	2.7	93.0
Bolivia	540	4.0	--	2,300	66.0	--	1.5	[illegible] .0
Brazil	1,390	11.0	--	29,600	44.0	18.0	33.5	[illegible] 0
Chile	1,170	13.0	--	3,000	21.0	25.0	2.1	[illegible] .0
Colombia	710	19.0	98.0	6,200	41.0	23.0	8.7	74.0
Ecuador	770	21.0	--	1,900	54.0	18.0	2.7	68.0
Guyana	560	4.0	22.0	210	32.0	24.0	0.2	--
Paraguay	760	6.0	19.0	580	53.0	--	0.9	79.0
Peru	830	11.0	46.0	4,300	45.0	20.0	5.1	72.0
Suriname	1,500	--	--	--	--	--	0.2	--
Uruguay	1,450	16.0	18.0	1,100	17.0	29.0	0.3	91.0
Venezuela	2,820	11.0	--	3,300	22.0	28.0	4.1	77.0
MIDDLE AMERICA								
Costa Rica	1,240	34.0	73.0	540	43.0	19.0	0.6	89.0
El Salvador	570	165.0	276.0	1,090	47.0	11.0	1.5	58.0
Guatemala	790	47.0	172.0	1,600	63.0	18.0	1.8	47.0
Honduras	450	23.0	--	800	65.0	--	1.1	52.0
Mexico	1,110	26.0	--	13,000	40.0	23.0	21.4	84.0
Nicaragua	830	15.0	--	504	51.0	17.0	0.9	57.0
Panama	1,220	19.0	88.0	500	39.0	15.0	0.5	82.0
CARIBBEAN								
Bahamas	3,450	14.0	1,025.0	70	7.0	20.0	*	93.0
Barbados	1,760	595.0	--	90	16.0	28.0	*	97.0
Cuba	900	--	--	--	--	--	2.1	--
Dominica	370	--	--	--	--	--	--	--
Dom. Republic	840	89.0	166.0	1,073	55.0	11.0	1.7	51.0
Grenada	450	--	--	--	--	--	*	--
Guadeloupe	2,380	--	--	--	32.4 a/	--	0.1	--
Haiti	230	175.0	406.0	2,800	80.0	--	1.0	20.0
Jamaica	1,150	182.0	--	750	33.0	--	0.5	86.0
Martinique	3,340	--	--	--	20.1 a/	--	0.1	--
Neth. Antilles	1,750	--	--	--	0.8 b/	--	*	--
Puerto Rico	2,460	--	--	--	--	--	0.4	--
Trin. & Tobago	2,380	184.0	--	350	25.0	35.0	0.2	90.0

TABLE 2 - (continued...)

NOTE:

-- Indicates that data are not available.

FOOTNOTES:

1/ Data are from the 1979 World Population Data Sheet, Population Reference Bureau, Inc., Washington, D.C.

2/ Data shown in the Population Reference Bureau's 1979 World Population Data Sheet have been used in the computation of the dependency ratio (population less than 15 years + population 65 years and over ÷ population aged 15-64 years).

3/ The Rate of Natural Increase (annual) is equal to the crude birth rate minus the crude death rate.

4/ The percentage of the total population living in areas defined as urban by each country.

5/ The Physical Quality of Life Index (PQLI) as shown on the 1979 World Population Data Sheet "was developed by the Overseas Development Council, Washington, D.C. in response to the need for a non-income measure that summarizes the many aspects of human well-being. It combines three indicators - infant mortality, life expectancy at age one, and literacy - into a single composite index. The index runs from 0 to 100, 0 being the lowest level of well-being and 100 being the highest."

6/ Per capita gross national product (GNP) is in United States dollars.

7/ Data are from the World Tables 1976 (table 2), World Bank, Washington, D.C.

8/ Data are from the World Bank's World Tables 1976 (table 3), with the exception of the following:

a/ Data obtained from the Yearbook of Labour Statistics, 1977 (table 2), International Labour Office, Geneva. Refers to year 1967.

b/ Data obtained from the International Labour Office's Yearbook of Labour Statistics, 1977 (table 2). Refers to year 1972.

9/ Data obtained from the Population Reference Bureau's 1978 World Population Data Sheet.

• Indicates that the labor force increase was less than 50,000 people.

10/ Data are from the World Bank's World Tables 1976 (table 5).

TABLE 3 - AVERAGE MONTHLY INCOME OF COLOMBIAN MIGRANTS TO VENEZUELA BY OCCUPATION; IN COLOMBIA BEFORE MIGRATING AND IN VENEZUELA; IN NATIONAL CURRENCIES AND UNITED STATES DOLLARS, AT 1978 PRICES. *

	IN COLOMBIA			IN VENEZUELA		
	PESOS	DOLLARS	N	BOLIVARES	DOLLARS	N
OCCUPATION						
1) Skilled Workers	5,104	130	(24)	1,500	357	(23)
2) Construction Workers	4,740	121	(25)	1,396	332	(41)
3) Mechanics & Technicians	4,678	119	(34)	1,658	395	(49)
4) Office Workers	3,950	101	(5)	-	-	(-)
5) Salesmen	3,460	88	(19)	1,758	419	(14)
6) Service Workers	3,081	79	(55)	1,529	364	(42)
7) Agricultural Workers	2,838	72	(31)	714	170	(28)
8) Other			(7)			(3)
Total	3,875	99	(200)	1,458	347	(200)

Source: Colombia: Ministerio de Trabajo y Seguridad Social. 1979. " Encuesta de Trabajadores Colombianos Indocumentados Deportados de Venezuela entre Noviembre 15, 1978 y Marzo 15, 1979," Bogota, Colombia, mimeographed, pp. 49 and 51.

* In the source from which these figures were taken the monthly incomes for Colombia were adjusted to reflect the purchasing power of the peso at 1978 price levels (p. 47). The estimates in U.S. dollars are only approximate since I assumed that the official exchange rates in 1979 were the same as those prevailing in 1978 in both Colombia and Venezuela (4.20 Bolivares = one dollar and 39.20 Pesos = one dollar).

BIBLIOGRAPHY

Acosta, M. 1976. "Azúcar e Inmigración Haitiana", in Azúcar y Política en la República Dominicana. Santo Domingo, Dominican Republic: TALLER.

Ahlers, T.H. 1979. A Microeconomic Analysis of Rural-Urban Migration in Haiti, Ph.D. Dissertation. Boston, Massachusetts: The Fletcher School of Law and Diplomacy.

Alberts, Joop. 1977. Migración Hacia Áreas Metropolitanas de América Latina: Un Estudio Comparativo, Santiago, Chile: Centro Latinoamericano de Demografía,

Alegre, H. 1977. "La Colonización en el Paraguay: El Eje Este", Revista Paraguaya de Sociología, 14(38):135-155.

Allman, J. and J. May. 1979. "Haitian International Migration, 1950-1980 - Recent Trends and Their Implications". (Preliminary Draft). (Mimeographed).

Andrews, N. 1975. "Trinidad and Tobago", in Population Policies in the Caribbean. Lexington, Massachusetts: D.C. Heath and Company - Lexington Books.

Arbelaez C., A. 1977. "El Exodo de Colombianos en el Período 1963-1973", Boletín Mensual de Estadística, No. 310 (May):7-43, Bogotá: Colombia: Departamento Administrativo Nacional de Estadística.

Bataillon C., and I. Lebot. 1976. "Migración Interna y Empleo Agrícola Temporal en Guatemala", Estudios Sociales Centroamericanos, 5(13):35-68. (January-April). San José, Costa Rica: Confederacion Universitaria Centroamericana.

Bellati, C. Circa 1973. "Bolivianos en las Fincas y Viñedos de la Provincia de Mendoza", Los Migrantes de Países Limitrofes, Buenos Aires, Argentina: Oficina Sectorial de Desarrollo de Recursos Humanos.

Bonaparte, H.M. 1973. "Subdesarrollo Dentro del Subdesarrollo: Las Villas Miserias de Argentina", Revista Paraguaya de Sociología, 10(27): 77-92.

Bouvier, L.F., with H.S. Shryock and H.W. Henderson. 1977. "International Migration: Yesterday, Today, and Tomorrow", Population Bulletin, 32(4). (August 1979 updated reprint).

Braido, J.F. 1972. "Inquiry Into Brazilian Settlers in Paraguay", ICMC Migration News, 21(4):12-20. (July-August).

Campos, J. and R. Pi Hugarte. 1973. "Migrantes de Clase Baja en Buenos Aires", Revista Paraguaya de Sociología, 10(27):101-117.

Carrón, J.M. 1976. La Estructura de la Producción y las Migraciones Externas del Paraguay. Santiago, Chile: FLACSO/PROELCE/CELADE (Programa de Actividades Conjuntas ELAS-CELADE).

Carrón, J.M. 1977. "Factores de Atracción de la Inmigración de Origen Limítrofe Existente en la Argentina". Paper presented at the 6th meeting of the Task Force on Migration of the Commission on Population and Development of CLACSO, México. (Mimeographed).

Carrón, J.M. 1979a. "Migraciones Intrarregionales en América Latina", in Población y Desarrollo en América Latina, Urquidi, V.L., & J.B. Morelos, (eds). El Colegio de México, Mexico.

Carrón, J.M. 1979b. "Shifting Patterns in Migration from Bordering Countries to Argentina: 1914-1970", International Migration Review, 13(2): 475-487. Fall.

Carrón, J.M., M. Leyton, and M. Preger. 1976. Proyecto: Factores Condicionantes de las Migraciones Internacionales Intra-Regionales en el Cono Sur de América Latina. (Parts 1 and 2). Programa de Actividades Conjuntas ELAS-CELADE (FLACSO).

CELADE (Centro Latinoamericano de Demografía). 1977. Boletín Demográfico, 10(20):July. Santiago, Chile.

CEPAM (Centro de Estudios de Pastoral y Asistencia Migratoria). 1977-1979. Acontecer Migratorio. Vol. I (No. 1-7) and Vol. II (No. 1-12).

Chaney, E.M. 1978. "The Caribbean on the Move: Undocumented Workers in the Hemisphere". Paper prepared for the Study Group on Immigration and U.S. Foreign Policy, Council on Foreign Relations, New York City, New York. (Mimeographed).

Chaney, E.M. 1979. "The World Economy and Contemporary Migration", International Migration Review, 13(2): 204-212. Summer.

Chèn, C-Y., and M. Picouet. 1979. Dinámica de la Poblacion - Caso de Venezuela. Caracas, Venezuela: UCAB-ORSTOM.

Chernick, S.E. 1978. The Commonwealth Caribbean - The Integration Experience. Baltimore, Maryland and London, England: The Johns Hopkins University Press (published for the World Bank).

Cocco, M. 1975. "El Sistema de Plantación: Consideraciones Generales", in Marino Hernández, F., A. Corten, M. Cocco, and I. Duarte Inmigración Haitiana y Producción Azucarera en la República Dominicana. Santo Domingo, República Dominicana: CEPAE.

Colombia: Ministerio de Trabajo y Seguridad Social, República de Colombia. 1979. "Encuesta de Trabajadores Colombianos Indocumentados Deportados de Venezuela Entre Noviembre 15, 1978 y Marzo 15, 1979", Bogotá, Colombia. (Mimeographed).

Conteris, H. 1970. "The Bolivian Braceros and the Provisional Committee on Their Behalf", Migration Today, 14:50-56. Spring.

Corten, A. 1975. "Migraciones e Intereses", in Marino Hernández, F., A. Corten, M. Cocco, and I. Duarte Inmigración Haitiana y Producción Azucarera en la República Dominicana. Santo Domingo, República Dominicana: CEPAE.

Corten, A. 1976. "Haiti: Estructura Agraria y Migración de Trabajadores a los Centrales Azucareros Dominicanos", in Azúcar y Política en la República Dominicana. Santo Domingo, Dominican Republic: TALLER.

Corten, A., M. Acosta, and I. Duarte. 1976. "Las Relaciones de Producción en la Economía Azucarera Dominicana", in Azúcar y Política en la República Dominicana. Santo Domingo, Dominican Republic: TALLER.

Corvalán, G. 1974. "La Emigración de Profesionales Paraguayos", Revista Paraguaya de Sociología, 11(31):91-120. (Sept.-December).

CSUCA/PCSS (Confederación Universitaria Centroamericana/ Programa Centroamericano de Ciencias Sociales). 1978. Estructura Demográfica y Migraciones Internas en Centroamérica. San José, Costa Rica: Editorial Universitaria Centroamericana (EDUCA).

de Caramuti, O.I.S. 1975. La Política Migratoria Argentina. Buenos Aires, Argentina: Depalma Abriendo Surcos.

de Sierra, G. 1977. "Migrantes Uruguayos Hacia la Argentina". Paper presented at the 6th meeting of the Task Force on Migration of the Commission of Population and Development of CLACSO, Mexico. (Mimeographed).

de Villegas, M.A. 1977. "Migrations and Economic Integration in Latin America: The Andean Group", International Migration Review, 11(1):59-76. Spring.

Diaz Santana, A. 1976. "The Role of Haitian Braceros in Dominican Sugar Production", Latin American Perspectives, (Issue 8), 3(1):120-132. (Winter).

Didone, M. 1979. "Algunas Verdades Sobre la Migración Indocumentada en Venezuela", Revista SIC, No. 414: 173-174. (April). Caracas, Venezuela.

di Filippo, A. 1975. "Las Tendencias del Crecimiento y la Distribución Espacial de la Población en América Latina". Paper presented at the Migration Conference sponsored by the Latin American Episcopal Council, Quito, Ecuador. (Mimeographed).

Diócesis de Cucuta. 1978. "La Migracion Ilegal de Colombianos a Venezuela", Cucuta, Colombia. (Mimeographed).

Duarte, I. 1975. "Corporaciones Azucareras y Migración", in Marino Hernández, F., A. Corten, M. Cocco, and I. Duarte Inmigración Haitiana y Producción Azucarera en la República Dominicana. Santo Domingo, República Dominicana: CEPAE.

Durham, W.H. 1979. Scarcity and Survival in Central America - Ecological Origins of the Soccer War. Stanford, California: Stanford University Press.

Ebanks, G.E. 1975a. "Barbados", in Population Policies in the Caribbean. Lexington, Massachusetts: D.C. Heath and Company - Lexington Books.

Ebanks, G.E. 1975b. "Jamaica", in Population Policies in the Caribbean. Lexington, Massachusetts: D.C. Heath and Company - Lexington Books.

Espinola, J.C. 1974. "Adaptation of Paraguayan Immigrants in Argentina", ICMC Migration News, 23(Nov.-Dec.):7-11.

Filgueria, C. 1978. "Predisposición Migratoria: La Situación de Egresados Profesionales", 5, Uruguay: Centro de Informaciones y Estudios del Uruguay (CIESU).

Filgueira, C.H., D. Veiga, and J.L. Petruccelli. 1978. "Models of Population Displacements in Uruguay" (Population and Development Policy Research Proposal on Migration in Developing Countries), Montevideo, Uruguay: CIESU (Centro de Informaciones y Estudios del Uruguay).

Galeano, L.A. 1978. "Dos Alternativas Históricas del Campesinado Paraguayo: Migración y Colonización (1870-1950)", Revista Paraguaya de Sociología, 15(41):115-142.

Gall, N. No date. "Los Indocumentados Colombianos".

Gillespie, F. and J. Browning. 1979. "The Effect of Emigration Upon Socioeconomic Structure: The Case of Paraguay", International Migration Review, 13(3): 502-518. Fall.

Glaessel-Brown, E.E. 1979. "Seasonal Labor Migration in Hispaniola: A Policy of Convenience", in J.D. Montgomery, H.D. Lasswell, and J.S. Migdal (eds.) Patterns of Policy - Comparative and Longitudinal Studies of Population Events. New Brunswick, New Jersey: Transaction Books.

Glaser, W. 1978. The Brain Drain - Emigration & Return. (UNITAR: Research Report No. 22). Elmsford, New York: Pergamon Press.

Hendricks, C. 1974. The Dominican Diaspora. New York, New York: Teacher's College Press.

Heras, E., D.E. Guiliot, and R. Gálvez. 1978. "Migración Tradicional y Migración de Crisis - Una Década de Afluencias Bolivianas y Chilenas a Argentina y la Región Cuyana (1965-1975)", Mendoza, Argentina: PISPAL. (Mimeographed).

ICMC Migration News. 1972a. "Migration Motivation in the Cono Sur (South America)", (Migration Facts & Figures: Statistical Supplement), 21(4).

ICMC Migration News. 1972b. "Difficult Situation of the Bolivian 'Bracero'", 21(4):25-27.

ICMC Migration News. 1972c. "Brain Drain of Paraguayan Physicians", 21(4):36-37.

ICMC Migration News. 1978a. "Brazilian and Paraguayan Immigrants in the Province of Misiones, Argentina", 27(Oct.-Dec.):37-41.

ICMC Migration News. 1978b. "Bolivians in Arica, Chile", No. 3:27-28.

ICMC Migration News. 1979a. "Chileans in Argentina Patagonia", 28(Jan.-March):26-29.

ICMC Migration News. 1979b. "The Situation of Migrant Workers in the Southern Cone of Latin America", 28(Jan.-March):29-33.

ILO (International Labour Office). 1974a. "Seminario Regional Tripartito Sobre la Situación de los Trabajadores Migrantes en Sudamérica", Documento de Trabajo Num. 1. Buenos Aires, Argentina. (Mimeographed).

ILO (International Labour Office). 1974b. "Seminario Regional Tripartito Sobre la Situación de los Trabajadores Migrantes en Sudamérica", Documento de Trabajo Num. 2 (Legislación Migratoria Andina). Buenos Aires, Argentina. (Mimeographed).

ILO (International Labour Office). 1977. Yearbook of Labour Statistics, 1977. Geneva, Switzerland.

International Review Group on Population & Development. 1978. "The Demographic Variables, Knowledge, Gaps, and Specific Research Recommendations", in Social Science Research on Population and Development in Latin America. El Colegio de México, Mexico.

Iorio, J.C. 1976. "El Problema Demográfico en la Argentina y las Corrientes Migratorias Latinoamericanas", Revista Argentina de Relaciones Internacionales, 2(4): 56-71.

James, D.D., and J.S. Evans. 1979. "Conditions of Employment and Income Distribution in Mexico as Incentives for Mexican Migration to the United States: Prospects to the End of the Century", International Migration Review, 13(1):4-24. Spring.

Jones, P.C. 1976. "La Migración Internacional de El Salvador, 1950-2000", San Salvador, El Salvador: Ministerio de Planificación y Coordinación del Desarrollo Económico y Social, Unidad de Población y Recursos Humanos. (Mimeographed).

Kritz, M.M. 1975. "The Impact of International Migration on Venezuelan Demographic and Social Structure", International Migration Review, 9(4):513-543. Winter.

Kritz, M.M. 1979. "International Labor Migration: A Critique of the Literature". Paper prepared for the meeting of the Committee on Latin American Demography and Population Studies, Social Science Research Council, New York. (Mimeographed).

Kritz, M.M. and D.T. Gurak. 1979. "International Migration Trends in Latin America: Research and Data Survey", International Migration Review, 13(3):407-427. Fall.

Landstreet, B. 1975. "Cuba", in Population Policies in the Caribbean. Lexington, Massachusetts: D.C. Heath and Company - Lexington Books.

Lattes, A.E. 1977. "A Century of International Migration in Argentina: 1870-1970", Paper prepared for the International Union for the Scientific Study of Population, General Conference, Mexico City, Mexico. Buenos Aires, Argentina: CENEP. (Mimeographed).

Mandle, J.R. 1975. "Guyana: Pro-Natalist Policies", in Population Policies in the Caribbean. Lexington, Massachusetts: D.C. Heath and Company - Lexington Books.

Marcenaro Boutell, R. 1973. "Argentinian Migration Policy", ICMC Migration News, 22(Jan.-Feb.): 3-5.

Marino Hernández, F. 1973. La Inmigración Haitiana. Santo Domingo, Dominican Republic: Ediciones Sargazo.

Marino Hernández, F. 1975. "La Inmigración Haitiana", in Marino Hernández, F., A. Corten, M. Cocco, and I. Duarte Inmigración Haitiana y Producción Azucarera en la República Dominicana. Santo Domingo, República Dominicana: CEPAE.

Marino Hernández, F., A. Corten, M. Cocco, and I. Duarte. 1975. Inmigración Haitiana y Producción Azucarera en la República Dominicana. Santo Domingo, República Dominicana: Centro de Planificación y Acción Ecuménica (CEPAE).

Mármora, L. No date. "Inmigración y Emigración en Sur América", Bogotá, Colombia. (Mimeographed)

Mármora, L. 1973. "El Estudio Histórico Estructural de los Movimientos Poblacionales en América Latina," in Castells, M. (ed.), Imperialismo y Urbanización en América Latina, Editorial Gustavo Gili, S.A., Barcelona.

Mármora, L. 1975. "Las Migraciones Internacionales en América Latina", Lima, Peru: Centro de Investigaciones Sociales, Económicas, Políticas y Antropológicas (CISEPA). (Mimeographed).

Mármora, L. 1976a. "Educación y Migración: Sus Relaciones en América Latina y el Caribe", in Dinámica de la Población y Planificación de la Educación en América Latina y el Caribe. Santiago, Chile: Oficina Regional de Educación de la UNESCO para América Latina y El Caribe, UNESCO.

Mármora, L. 1976b. "El Desarrollo de la Política de Migraciones Laborales en Colombia", Migraciones Laborales, Bogotá, Colombia: SENALDE-Ministerio de Trabajo y Seguridad Social de Colombia, 1:41-74. (May).

Mármora, L. 1979. "Labor Migration Policy in Colombia", International Migration Review, 13(3):428-439. Fall.

Marshall, A. 1979a. "International Labour Migration in Latin America: The Southern Cone". Paper prepared for presentation at the Conference on International Migration, The Rockefeller Foundation, Bellagio Study and Conference Center, Como, Italy. (Mimeographed).

Marshall, A. 1979b. "Immigrant Workers in the Buenos Aires Labor Market", International Migration Review, 13(3):488-501. Fall.

Marshall, D.I. No date 'a'. "Haitian Migration to the Bahamas". (To appear in a reader on Sociology of the Contemporary Caribbean, Department of Sociology, University of the West Indies, Trinidad). (Mimeographed).

Marshall, D.I. No date 'b'. "International Migration as Circulation: The Haitian Movement to the Bahamas". (Prepared for a volume Circulation: Movement in the Developing World, M. Prothro & M. Chapman, eds.). (Mimeographed).

Marshall, D.I. 1979. "Emigration as an Aspect of the Barbadian Social Environment". Paper presented at the 8th National Meeting of Latin American Studies Association, Session S4, Pittsburgh, Pennsylvania. (Mimeographed).

Matetic, J. 1972. "New Agreements Between Chile and Argencina", ICMC Migration News, 21(4):21-24.

May, R.H., Jr. 1979. "White Africans Seek Bolivian Lands", Migration Today, 23:18-20.

Merrick, T.W. and D.H. Graham. 1979. Population and Economic Development in Brazil - 1800 to the Present. Baltimore, Maryland: The Johns Hopkins University Press.

Miletich, J.J. 1979. Convenio "Simón Rodríguez" de Integración Sociolaboral (Concordado Con Sus Reglamentos y Notas). Lima, Peru: Centro Interamericano de Administración del Trabajo (Reg. 231/AT-45).

Morales Vergara, J. 1974. "Panorama de la Migración Internacional Entre Países Latinoamericanos", Serie A, No. 121, Santiago, Chile: Centro Latinoamericano de Demografía (CELADE). (Mimeographed).

Neiva, A.H. 1965. "International Migrations Affecting Latin America", The Milbank Memorial Fund Quarterly, 43(4):119-143. (October - Part 2).

Newland, K. 1979. "International Migration: The Search for Work", Worldwatch Paper 33.

Oficina Sectorial de Desarrollo de Recursos Humanos. 1973. "La Inmigración Desde Países Limítrofes Hacia la Argentina - Análisis Estadístico", Buenos Aires, Argentina. (Mimeographed).

Oficina Sectorial de Desarrollo de Recursos Humanos. Circa 1973. (See C. Bellati, S.M. Pavón and F. Rodríguez, E. Rissech and F. Rodríguez, and J.M. Villar).

OAS (Organization of American States). 1974. "La Migración Laboral Andina". Document prepared for the Secretaría General and presented at the Reunión Técnica Sobre Migración Laboral Andina, Lima, Peru. (Mimeographed).

Paraguay: Secretaría Técnica de Planificación. 1978. "Itapua y Misiones - Un Estudio Sociohistórico y Demográfico de la Región", Asunción, Paraguay. (Mimeographed).

Paraguay: Secretaría Técnica de Planificación and CELADE. 1978. "Alto Paraná: Diagnóstico de la Región (Análisis Crítico de la Bibliografía Existente)", Asunción, Paraguay.

Patterson, O. 1978. "Migration in Caribbean Societies: Socioeconomic and Symbolic Resource", in W.H. McNeill and R.S. Adams (eds.) Human Migration - Patterns and Policies. Bloomington, Indiana: Indiana University Press.

Pavón, S.M., and F. Rodríguez. Circa 1973. "Chilenos en el Alto Valle del Río Negro", Los Migrantes de Países Limitrofes, Buenos Aires, Argentina: Oficina Sectorial de Desarrollo de Recursos Humanos.

Pedisie, L. 1971. "Migration Problems in Argentina", ICMC Migration News, 20(March-April):3-16.

Pellegrini, V. and F. de Paula Oliva. 1970. "La Inmigración Ilegal Paraguaya, ¿Una Minoría Condenada?", Revista del Centro de Investigación y Acción Social, 19(191): 5-23.

Petras, E.M. 1978. "A Dozen Fallacies about Human Resources in the Caribbean". Paper presented at the Woodrow Wilson International Center for Scholars, Seminar Series on the Caribbean, Washington, D.C.

Petruccelli, J.L. No date. Migración y Perspectivas de la Población en el Uruguay. (No. 6). Uruguay: Centro de Informaciones y Estudios del Uruguay (CIESU).

Petruccelli, J.L. 1978. The Migration Movement from Uruguay to Australia. Montevideo, Uruguay: CIESU (Centro de Informaciones y Estudios del Uruguay). (No. 23).

Petruccelli, J.L. 1979. "Consequences of Uruguayan Emigration: Research Note", International Migration Review, 13(3):519-526. Fall.

Petruccelli, J.L., and J.C. Fortuna. 1976. La Dinámica Migratoria del Uruguay del Ultimo Siglo, 1875-1975. Montevideo, Uruguay: CIESU (Centro de Informaciones y Estudios del Uruguay). (No. 22).

Pidoux de Drachemberg, L. 1975. "Inmigración y Colonización en el Paraguay", Revista Paraguaya de Sociología, 12(34):65-123.

Pi Hugarte, R. 1979a. "La Migración de Trabajadores Colombianos al Ecuador", Bogotá, Colombia: SENALDE/UNDP-ILO Project. (Mimeographed).

Pi Hugarte, R. 1979b. "Los Trabajadores Colombianos Deportados del Ecuador y el Establecimiento de Centros de Recepción", Bogotá, Colombia: SENALDE/UNDP-ILO Project. (Mimeographed).

Population Reference Bureau, Inc. 1978 and 1979. World Population Data Sheet. Washington, D.C.

Reboratti, C.E. and C.K. de Sabalain. 1979. "Migraciones Estacionales en la República Argentina", Buenos Aires, Argentina: CENEP. (Mimeographed).

Rissech, E., and F. Rodríguez. Circa 1973. "Chilenos en San Carlos de Bariloche", Los Migrantes de Países Limitrofes, Buenos Aires, Argentina: Oficina Sectorial de Desarrollo de Recursos Humanos.

Rivarola, D.M. 1967. "Aspectos de la Migracion Paraguaya", Revista Paraguaya de Sociologia, No. 8-9: 40-88.

Rivarola, D.M., L.A. Galeano, and R.B. Fogel. 1979. "Políticas del Estado y Redistribución Espacial de la Población", Paraguay: Centro Paraguayo de Estudios Sociológicos. (Mimeographed).

Rochcau , G. 1976. "Migration Movements in Latin America", ICMC Migration News, 25(Jan.-March):3-8.

Sánchez C., D., M. Leyton, and M. Preger. 1977. Factores Condicionantes de las Migraciones Internacionales Intraregionales en el Cono Sur de América Latina , Santiago, Chile: Facultad Latinoamericana de Ciencias Sociales (FLACSO). (Mimeographed).

Sassen-Koob, S. 1979. "Economic Growth and Immigration in Venezuela", International Migration Review, 13(3): 455-474. Fall.

Schmidt, A. 1979. Los Extranjeros en Costa Rica. San Jose, Costa Rica: Comite Nacional de Poblacion, Unidad de Planificacion y Evaluacion.

Segal, A.L. (ed.). 1975a. Population Policies in the Caribbean. Lexington, Massachusetts: D.C. Heath and Company - Lexington Books.

Segal, A. 1975b. "Population Policies and Caribbean Crisis", in Population Policies in the Caribbean. Lexington, Massachusetts: D.C. Heath and Company - Lexington Books.

Segal, A.L. 1975c. "Bahamas", in Population Policies in the Caribbean. Lexington, Massachusetts: D.C. Heath and Company - Lexington Books.

Segal, A.L. 1975d. "Haiti", in Population Policies in the Caribbean. Lexington, Massachusetts: D.C. Heath and Company - Lexington Books.

SENALDE-Ministerio de Trabajo y Seguridad Social de Colombia. 1976a. "Política de Migraciones Laborales en Colombia", Migraciones Laborales, Bogotá, Colombia, 1:7-39. (May).

SENALDE-Ministerio de Trabajo y Seguridad Social de Colombia. 1976b. "Organización y Puesta en Marcha del Sistema de Estadísticas Continuas Migratorias Externas", Migraciones Laborales, Bogotá, Colombia, 2: July.

Simmons, A., S. Diaz-Briquets, and A.A. Laquian. 1977. Social Change and Internal Migration - A Review of Research Findings from Africa, Asia, and Latin America. Ottawa, Canada: International Development Research Centre (IDRC-TS6e).

Smithsonian Institution, Interdisciplinary Communications Program. 1976. The Dynamics of Migration: International Migration. (Occasional Monograph Series, Number Five, Volume Two - ICP Work Agreement Reports). Washington, D.C.: Smithsonian Institution.

Solberg, C. 1978. "Mass Migrations in Argentina, 1870-1970", in W.H. McNeill and R.S. Adams (eds.) Human Migration - Patterns and Policies. Bloomington, Indiana: Indiana University Press.

Somoza, J.L. 1979. "Estimación de la Emigración de Colombia a Partir de Información Sobre Residencia de Hijos Sobrevivientes Recogida en Una Encuesta", Documento de Trabajo. Santiago, Chile: Centro Latinoamericano de Demografía, Programa de Demografía (CELADE). (Mimeographed).

Torales, P. 1978. "Las Migraciones Laborales en la Frontera de Colombia con Panamá", Migraciones Laborales, Bogotá, Colombia: SENALDE-Ministerio de Trabajo y Seguridad Social de Colombia, 2: August.

Torrado, S. 1979a. "Las Políticas de Migraciones Internacionales en la América Latina", in Centro Latinoamericano de Demografía, Cuadernos del CELADE. La Política de Población en América Latina, 1974-1978. Santiago, Chile: CELADE. (Part 1).

Torrado, S. 1979b. "International Migration Policies in Latin America", International Migration Review, 13(3):428-439. Fall.

Ugalde, A., F.D. Bean, and G. Cardenas. 1979. "International Migration from the Dominican Republic: Findings from a National Survey", International Migration Review, 13(2):235-254. Summer.

United Nations, Department of Economic and Social Affairs. 1977a. National Experience in the Formulation and Implementation of Population Policy, 1959-1976: Cuba. ST/ESA/SER.R/17. New York, New York.

United Nations, Department of Economic and Social Affairs. 1977b. National Experience in the Formulation and Implementation of Population Policy, 1960-1976: Mexico. ST/ESA/SER.R/18. New York, New York.

United Nations, Department of Economic and Social Affairs. 1978a. National Experience in the Formulation and Implementation of Population Policy, 1960-1976: Panama. ST/ESA/SER.R/19. New York, New York.

United Nations, Department of Economic and Social Affairs. 1978b. National Experience in the Formulation and Implementation of Population Policy, 1960-1976: Peru. ST/ESA/SER.R/20. New York, New York.

United Nations, Department of Economic and Social Affairs. 1978c. National Experience in the Formulation and Implementation of Population Policy, 1962-1976: Trinidad and Tobago. ST/ESA/SER.R/21. New York, New York.

United Nations, Department of Economic and Social Affairs. 1979a. World Population Trends and Policies - 1977 Monitoring Report. (Volume I: Population Trends and Volume II: Population Policies). Population Studies, No. 62. ST/ESA/SER.A/62. New York, New York.

United Nations, Population Division, Department of Economic and Social Affairs. 1979b. Trends and Characteristics of International Migration Since 1950. (Demographic Studies No. 64). ST/ ESA/SER.A/64. New York, New York.

UNFPA and Bolivia: Ministerio de Planeamiento y Coordinación. 1979. Projecto Políticas de Población (BOL-18-P01) - Fase de Prediagnóstico. La Paz, Bolivia.

Urzua, R. 1977. "International Migration", in Social Science Research on Population and Development in Latin America, International Review Group on Population and Development, El Colegio de México, Mexico.

Villar, J.M. Circa 1973a. "Bolivianos en las Fincas Tabacaleras del Norte", Los Migrantes de Países Limitrofes, Buenos Aires, Argentina: Oficina Sectorial de Desarrollo de Recursos Humanos.

Villar, J.M. Circa 1973b. "Estudio de Actitudes de los Habitantes de la Ciudad de Salta Sobre Migrantes Bolivianos", Los Migrantes de Países Limitrofes, Buenos Aires: Oficina Sectorial de Desarrollo de Recursos Humanos.

Welch, B. 1968. "Population Density and Emigration in Dominica", The Geographical Journal (Royal Geographical Society of London), 134(2):227-235.

Whiteford, S., and R.N. Adams. 1973. "Migration, Ethnicity, and Adaptation: Bolivian Migrant Workers in Northwest Argentina", in Migration and Urbanization - Models and Adaptive Strategies, Du Toit, B.M., and H.I. Safa (eds.). The Hague, Netherlands: Mouton Publishers.

Wilkie, J.W., & R. Reich (eds.). 1978. Statistical Abstract of Latin America (vol. 19). Los Angeles, California: University of California-Los Angeles Latin American Center Publications.

World Bank. 1976. World Tables 1976. Baltimore, Maryland: The Johns Hopkins University Press.

TABLE 11.15.
RECOMMENDED TRAINING PROGRAM
ENGINEERING DESIGN TRAINING

POSITION TITLE/JOB DESCRIPTION	ORGANIZATION SOURCE / TRAINEE NUMBER	ENTRY LEVEL OF EDUCATION (YRS) / RELATED (YRS/MOS) EXPERIENCE	ESTIMATED ADDITIONAL TRAINING REQUIRED MOS/YRS	LOC. OF TRNG INDO – U.S. TYPE OF TRNG OJT–CLASSROOM	TRAINING COURSE PROGRAM DESCRIPTION
Road Design Engineer	DPUP 4 (except unit IIID)	Civil Engineer None	4 months 2 months	Indonesia Classroom OJT**	I. *Basic Supervision II. *Basic Administrative Procedures III. Engineering Design A. Engineering Design 1. Route Aligment 2. Profile/Bench Marks 3. Cross Section. B. Soil Mechanics Review. 1. Soil Classification 2. Embankment control 3. Fill Testing 4. Soil Exploration 5. Quality Control 6. Safety Procedures C. Feeder Road Design And Construction. 1. Geometric Design for Feeder Roads 2. Cross Section Design for Feeder Roads. 3. Selection and Placement of
Bridge Design Engineer	DPUP 4 (except unit IIIC)	Civil Engineer None	– " –	– " –	
Road Design Engineer	DPUK 25 (except unit IIID)	Civil Engineer None	– " –	– " –	
Bridge Design Engineer	DPUK 25 (except unit IIIC)	Civil Engineer None	– " –	– " –	
Inventory & Mapping Engr.	DPUP Staff 4 (unit IIIA only)	Civil ENgineer None	1 month 2 months **3 months	– " – ** Check - up	
Hwy. Design Technician	DPUP Staff 8 (unit IIIC only)	Sr. Tech. School 1 year	2 months 2 months ** 3 – 5 days	– " – ** Check - up	

* As Outlined on Table 11.3, sht 1 of 4 & Table 11.3, sht 2 of 4
(unit I) (unit IV)

** Under Supervision of Consultant Resident Staff in Provincial Offices.

Sheet 1 of 2

TABLE 11.15.
RECOMMENDED TRAINING PROGRAM
ENGINEERING DESIGN TRAINING (CONTINUED)

POSITION TITLE/JOB DESCRIPTION	ORGANIZATION SOURCE / TRAINEE NUMBER	ENTRY LEVEL OF EDUCATION (YRS) / RELATED (YRS/MOS) EXPERIENCE	ESTIMATED ADDITIONAL TRAINING REQUIRED MOS/YRS	LOC. OF TRNG INDO – U.S. TYPE OF TRNG OJT–CLASSROOM	TRAINING COURSE PROGRAM DESCRIPTION
Bridge Design Technician	DPUP Staff 8 (unit IIID only)	Sr. Tech. School 1 year	2 months 2 months 3 – 5 days	Indonesia Classroom O J T ** Check–up	(cont'd) Drainage structures 4. Erosion control 5. Estimating runoff quantities for drainage design. 6. Simplefied methods of field design. D. Feeder Road Bridges And Structures Design & Construction 1. Wooden Bridges 2. Metal Bridges 3. Prestressed/Precast concrete bridges. E. Cost Estimating F. Contract Tendering/Administration G. Network Diagramming H. Environmental Impact Analysis I. Socio–Economic Analysis
Survey & Inv. Engineer	DPUK/S Staff 25 (unit IIIA only)	B.E. 1 year	1 month 2 months	– " –	
Bridge Design Technician	DPUK/S Staff 25 (unit IIIC only)	Sr. Tech. School 1 year	2 months 2 monts	– " –	

Sheet 2 of 2

TABLE 11.16.
RECOMMENDED TRAINING PROGRAM
PLANNING ENGINEERING TRAINING

POSITION TITLE/JOB DESCRIPTION	ORGANIZATION SOURCE / TRAINEE NUMBER	ENTRY LEVEL OF EDUCATION (YRS) / RELATED (YRS/MOS) EXPERIENCE	ESTIMATED ADDITIONAL TRAINING REQUIRED MOS/YRS	LOC. OF TRNG INDO – U.S. / TYPE OF TRNG OJT–CLASSROOM	TRAINING COURSE PROGRAM DESCRIPTION
Head of Communication Sub–Section	Bappeda 4	Planning Graduate	4,5 months	Indonesia Classroom	* I. Long Range Planning * II. Data Collection and Analysis ** III. Implementation Planning.
To be determined	Staff of Sub Directorate for Rural Roads. 3	– " –	– " –	– " –	

* As outline on Table 11.6 (unit I & IV), sht 1 of 2 and **Table 11.6, sht 2 of 2 (unit V)

Sheet 1 of 1

TABLE 11.17.
RECOMMENDED TRAINING PROGRAM
PLANNING AND PROGRAMMING TRAINING

POSITION TITLE/JOB DESCRIPTION	ORGANIZATION SOURCE / TRAINEE NUMBER	ENTRY LEVEL OF EDUCATION (YRS) / RELATED (YRS/MOS) EXPERIENCE	ESTIMATED ADDITIONAL TRAINING REQUIRED MOS/YRS	LOC. OF TRNG INDO – U.S. / TYPE OF TRNG OJT–CLASSROOM	TRAINING COURSE PROGRAM DESCRIPTION
To be determined	DPUK/S Staff 25	Planning Graduate	4,5 months	Indonesia Classroom	* I. Long Range Planning * II. Annual Programming * III. Data Collection Analysis
Statistical Assistent	Bappeda Staff 8	Sr. High School 2 years	4,5 months	Indonesia Classroom	
Trans/Devmt Economist	Bappeda 4	Economist 2 years	4,5 monts	Indonesia Classroom	
Trans. Plnr/ Programmer Assistant	Bappeda 8	Bachelor Degree 2 years	4,5 months	Indonesia Classroom	
To be determined	Sub–Direct. for Rural Rds 3	2 years	4,5 months	Indonesia Classroom	

* As outlined on Table 11.6, sht 1 of 2 (unit I, III, & IV)

Sheet 1 of 1

TABLE 11.18
RECOMMENDED TRAINING PROGRAM
EQUIPMENT WORKSHOP DIESEL INJECTION SYSTEMS MAINTENANCE & REPAIR TRAINING

POSITION TITLE/JOB DESCRIPTION	ORGANIZATION SOURCE / TRAINEE NUMBER	ENTRY LEVEL OF EDUCATION (YRS) / RELATED (YRS/MOS) EXPERIENCE	ESTIMATED ADDITIONAL TRAINING REQUIRED MOS/YRS	LOC. OF TRNG INDO – U.S. TYPE OF TRNG OJT–CLASSROOM	TRAINING COURSE PROGRAM DESCRIPTION
Diesel Inj. Systems Specialist	DPUP/K Staff 6	Technical High School Graduate 3 years Master Mechanic	3 months On–going 3 – 5 days	Indonesia Classroom O J T * Check - up *	I. Diesel Injection Systems A. Theory & Principles 1. 2 cycle engines 2. 4 cycle engines B. Types of Systems 1. Distributor 2. Pump C. Injector Components D. Maintenance & Repair E. Trouble Shooting F. Test Procedures

* Under supervision of consultant resident staff

Sheet 1 of 1

TABLE 11.19.
RECOMMENDED TRAINING PROGRAM
EQUIPMENT WORKSHOP HYDRAULIC SYSTEMS MAINTENANCE & REPAIR TRAINING

POSITION TITLE/JOB DESCRIPTION	ORGANIZATION SOURCE / TRAINEE NUMBER	ENTRY LEVEL OF EDUCATION (YRS) / RELATED (YRS/MOS) EXPERIENCE	ESTIMATED ADDITIONAL TRAINING REQUIRED MOS/YRS	LOC. OF TRNG INDO – U.S. TYPE OF TRNG OJT–CLASSROOM	TRAINING COURSE PROGRAM DESCRIPTION
Hydraulic Systems Specialist	DPUP/K Staff 20	Technical High School Graduate 3 years Master Mechanic	3 months On - going 3 – 5 days	Indonesia Classroom O J T* Check - up*	I. Construction Equipment Hydraulic Systems A. Theory & Principles 1. High press. sys. 2. Low press. sys B. System Components C. Maintenance & Repair D. Trouble Shooting E. Test Procedures

* Under supervision of consultant resident staff.

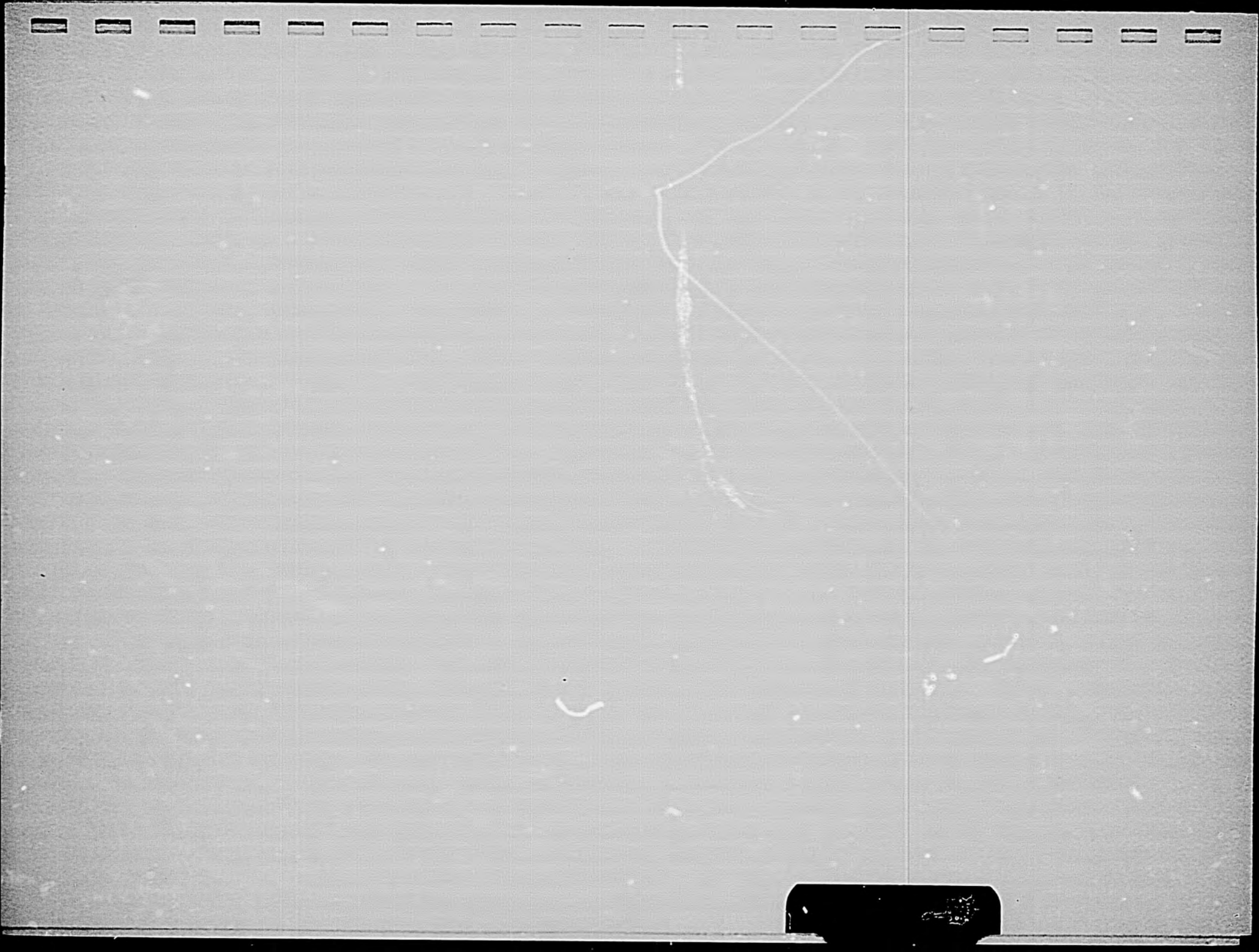
Sheet 1 of 1

TABLE 11.20
RECOMMENDED TRAINING PROGRAM
INSTRUCTOR TRAINING

POSITION TITLE/JOB DESCRIPTION	ORGANIZATION SOURCE / TRAINEE NUMBER	ENTRY LEVEL OF EDUCATION (YRS) / RELATED (YRS/MOS) EXPERIENCE	ESTIMATED ADDITIONAL TRAINING REQUIRED MOS/YRS	LOC. OF TRNG INDO – U.S. TYPE OF TRNG OJT–CLASSROOM	TRAINING COURSE PROGRAM DESCRIPTION
Varias	Varies	N/A	2 months On-going 3 – 5 days	Indonesia Classroom O J T** Check - up	I. Instructor Training A. Preparing Courses of study B. Stating Objectives C. Determining Content D. Arrange Knowing and Doing Units E. Developing Lesson Plans F. Using Effective Training Techniques G. Developing Training Aids H. Using Written Instructional Materials. I. Evaluating Training Results J. On-the-job Indoctrination Techniques.

**Under supervision of consultant resident staff.

Sheet 1 of 1



SECTION 12

ESTIMATES

This section addresses the study Program Terms of Reference requirements to provide (1) order-of-magnitude estimates of the cost of equipment , parts and bridge structural steel that will have to be supplied to each Province and District to bring them up to the "required strength", (2) a preliminary analysis of additional workshop facilities and equipment required to establish a basic construction and maintenance capability in each Province within the context of a labor-intensive economy and (3) preliminary estimates of training program course development time, instructor's time, training equipment and other aids, and training facilities.

In addition to these estimates the GOI Study Program Steering Committee requested the consultan: to provide (1) an order-of-magnitude estimate of the total costs for the feeder roads program implementation in the four study Provinces and (2) to project these costs over a five year period (rather than the three year period set forth in the study Program Terms of Reference), so as to include costs through that period of time estimated to be required to (a) complete the initial road and bridge rehabilitation, (b) complete procurement of road maintenance equipment and the mobilization of government maintenance crews, (c) complete construction and equipping of additional recommended equipment workshops and (d) complete the recruiting and training of required additional GOI personnel.

Thus this section includes the following estimates/basis of estimates with order-of-magnitude costs, which are presented in the remainder of this section in the order listed.

(1) Equipment and spare parts. (paragraph 12.1).

(2) Bridge structural steel. (costs included in item (7) below). (paragraph 12.2).

(3) Provincial workshops. (paragraph 12.3).

(4) Training aids, facilities and equipment. (paragraph 12.4).

(5) Additional GOI staff costs. (paragraph 12.5).

(6) Consultant costs. (paragraph 12.6).

(7) Physical program execution. (paragraph 12.7).

Cost estimates are given in constant FY 79/80 rupiahs. Where foreign currency cost estimates were made, they were made in U.S. dollars and coverted to rupiahs at Rp 625/$.

Estimated costs by type, location and year have been tabulated in Table 9.1 and plotted on Figures 9.2 through 9.7.

12.1. EQUIPMENT AND SPARE PARTS

As stated in Section 8, sub-paragraph 8.6.3, a precise quantitative analysis of the equipment required could not be performed during this limited study phase. The equipment required for each Province is directly related to the sum of the on-going and planned project needs versus the equipment that is available. However, based on the recommendation that government crews perform annual/scheduled maintenance on District roads, the following order-of-magnitude equipment estimates are presented for both equipment intensive and labour intensive methods. It should be noted that all Districts are not presently capable of perfoming maintenance strictly by the labor intensive method.

Table 12.1 summarizes the estimated equipment costs for all four Provinces. Tables 12.2 through 12.5 summarizes the equipment and equipment operating costs for each District in the four study provinces over the next five years. The equipment summaries (per crew) for the equipment intensive and labor intensive methods are shown on Tables 8.23 and 8.25 respectively. It is estimated that each crew would be capable of maintaining an average of 200 Km of District roads per year. The number of crews required, by District, is dictated by the number of kilometers of District roads within the District.

The phasing of District road maintenance crews are shown on Tables 12.2 through 12.5 is based upon the assumption that only those existing roads which are in "good to fair" condition are worth maintaining on a regularly scheduled basis. Thus, it is assumed those roads currently classified "good to fair" will receive regularly scheduled maintenance during the first phase-in year. It is further assumed that those roads which are currently classified as being in a "poor" to "damaged" condition will be rehabilitated/repaired at the rate of 20% per year during the extended five year program period thereby putting them into the "good to fair" category. As these roads are rehabilitated, they will be added to the annual scheduled maintenance program. Thus commencing in the fifth year it is assumed the total currently existing District road network in the four study Provinces will be receiving regular scheduled maintenance.

It should be noted that any significant new construction program would affect the estimated number of maintenance crews required, and that the estimate would have to be revised accordingly. Such revisions of estimates will be a normal, annual requirement of GOI planners during project implementation.

The District roads maintenance costs shown on Tables 12.2 through 12.5, and District roads maintenance equipment costs shown on Table 12.1, include allowances for over a five year

period for depreciation, fuel, oil and lubricants, operator, spare parts, and repairs. Crew labor costs estimates are based on data furnished by DGH staff and equipment cost estimates are based on data obtained from local suppliers.

Equipment presently on hand continues to be utilized for new construction and betterment projects and will probably not be in usble condition for phase-in of the government's District road maintenance program; it has therefore not been considered in these estimates.

Equipment on hand which may be in good operating condition, at the time of incorporation into equipment pools thus would reduce the equipment purchase requirements accordingly. This possible reduction is estimated to be negligible.

12.2 BRIDGE STRUCTURAL STEEL

All material necessary to support District roads bridge requirements are available in Indonesia and thus no stockpiling of bridge structual steel is required. Therefore, with the concurrence of Bina Marga and USAID, no separate estimate of structual steel was made. However costs of bridge structual steel is included in the order-of-magnitude cost estimate of bridge rehabilitation and replacement, paragraph 12.7.

12.3. PROVINCIAL WORKSHOPS

The capability of the five existing Provincial workshops must be upgraded over the next five years. Fifteen new Provincial workshops are recommended to maintain the equipment required for a comprehensive annual District road maintenance program within the four Provinces associated with the study and to adequately support other National and Provincial road projects.

The cost estimates for this section were derived as follows :

(1) **Renovate existing workshops**

An allowance of $ 100,000 (Rp 62,500,000) per workshop was provided to accomplish this work and is based upon visual inspections carried out by the consultant's field staff.

(2) **Construct New Workshops Facilities.**

These estimates are based upon the local average construction costs for this type of construction of $ 160 per m^2 (Rp 100,000 per m^2).

(3) **Tools / Equipment, and Diesel Injection Equipment**

These estimates are based upon data obtained from local representatives of tool and equipment manufacturers.

The preliminary cost estimates to accomplish this work are summarized as follows :

(1) Renovate existing workshops (Note : a comprehensive condition survey was not accomplished during this study). Allow $100,000 = Rp 62,500,000 x 5 facilities = $ 500,000 = Rp 312,000,000

(2) Construct new workshop* = $ 225,000 = Rp 140,625,000 x 15 facilities = $ 3,375,000 = Rp 2,109,375,000

(3) Tools and Equipment = $ 379,000 = Rp 236,875,000 x 20 facilities = $ 7,580,000 = Rp 4,737,500,000

(4) Diesel injection system diagnostic and repair equipment $.150.000 = Rp 93,750,000 (1) x 4 facilities = $ 600,000 = Rp 375,000,000

Total = $ 12,055,000 = Rp 7,534,375,000

TOOLS AND EQUIPMENT

(per workshop)

1. Mechanics tool sets $ 1,500 x 8 = $ 12,000 = Rp 7,500,000
2. Power tools (impact wrenches, electric drills, etc) $ 5,000 = Rp 3,125,000
3. Spare parts bins and racks = $ 15,000 = Rp 9,375,000
4. Special tools (will vary depending upon equipment complement at each workshop) assume $ 25,000 = Rp 15,625,000
5. Machine shop equipment (lathe, hydraulic press, drill presses, shaper, band saw, etc). $ 100,000 = Rp 62,500,000
6. Hydraulic systems diagnostic and repair equipment $ 50,000 = Rp 31,250,000
7. Electrical ignition system diagnostic and repair equipment $ 25,000 = Rp 15,625,000
8. Mobile crane (8 ton) $ 30,000 = Rp 18,750,000

---

* See Figure 12.1 for schematic layout of typical new Provincial workshop.

9. Overhead crane (10 ton) $ 30,000 = Rp 18,750,000

10. Mobile welder (400 A) $ 10,000 x 2 = $ 20,000 = Rp 12.500,000

11. Compressor (100 CFM) $ 12,000 = Rp 7,500,000

12. Generator (110–220–20 KW) $ 50,000 = Rp 31,250,000

13. Miscellaneous equipment (battery charger, jacks, etc) $ 5,000 = Rp 3,125,000

Total per workshop : $ 379,000 = Rp 236,875,000

Diesel injection system diagnostic and repair equipment will be required in one workshop per Province. This shop will be responsible for all injection system diagnosttic, repair and overhaul required by other workshops within the Province. The total cost per workshop shown above does not include the Diesel injection equipment, which is estimated at $ 150,000 (Rp 93,750,000) per workshop x 4 workshops = $ 600,000 = Rp 375,000,000.

For purposes of this estimate the tools and equipment at the existing workshops were not considered since many items are missing and items on hand are mostly in very poor condition. The tools and equipment which may be servicable at the time of implementing this proposal, would reduce the cost accordingly. However, this reduction is estimated to be miinor.

12.4. TRAINING

A. Course Development Time

Estimated course development times are shown on Table 12.6. Total hours estimated is 11,447 (out-of-country) at on order-of-magnitude estimated cost of Rp 179,000,000 and translation cost of Rp 3,200,000.

B. Consultant Instructor Time

Shown on sheets 3,4 and 5 of Figure 13.3, estimated totals are :

(1) 103 expatriate man-months

(2) 190 local consultant man-months

Total 293 man-months.

C. Training Equipment

Estimated training equipment (with order of magnitude estimate) is listed in Table 12.7. It is noted that it is recommended that this equipment will be used from equipment procured for the road maintenance program.

D. Training Aids

A list of training aids required and an order-of-magnitude cost estimate is presented in Table 12.8. Training aids costs are based upon prices: obtained form local suppliers where possible. When local prices were not available, an allowance has been made for the item based upon the consultant's judgement. The cost estimate breakdown on Table 12.8 indicates whether a specific cost is derived from a local supplier (L), or from the consultant's independent estimate (C).

The tabulation below summarizes the annual and total training aids estimated costs for Jakarta and each of the four Provinces.

TRAINING AIDS COST SUMMARY (RP X 10^6)

YEAR I	YEAR II	YEAR III	YEAR IV	YEAR V	TOTAL	
			J A K A R T A			
33.1	14.2	4.3	–0–	–0–	51.6	
			A C E H			
12.2	0.6	1.2	0.6	1.2	15.8	
			J A M B I			
12.2	0.6	0.6	0.6	0.6	14.6	
			CENTRAL SULAWESI			
12.2	0.6	0.6	0.6	0.6	14.6	
			WEST NUSA TENGGARA			
12.8	–0–	–0–	1.2	–0–	14.0	
82.5	16.0	6.7	3.0	2.4	110.6	TOTAL

E. Training Facilities

A typical Provincial workshop training facility requirements layout with an order-of-magnitude cost estimate is shown on Figure 12.2.

12.5. ADDITIONAL GOI STAFF

Additional GOI staff costs are those costs estimated for :

(1) Labor costs for additional Provincial and District personnel required in the four Provinces (except for road and bridge maintenance crews; labor costs for these personnel are included in paragraph 12.1).*

(2) Labor costs for GOI training program instructors

(3) Provincial based GOI instructors' out-of-station allowances while receiving instructor's training in Jakarta.

(4) Student's out-of-station allowances while attending courses of less than six months duration.**

12.5.1. ADDITIONAL GOI STAFF COSTS

These costs were developed as follows,

A. Recruitment of personnel required to increase current staffing levels shown in Section 4 to those levels recommended in Section 10.

B. Recruitment of these personnel is phased with the training program, Section 11.

C. At the recommendation of DGH staff, calculations of staff costs/individual man-months were made according to the following formula :

1. The basic wage is determined by education and years of experience, as indicated on the "Basic Salary List for Government Employees" in accordance with "Governmental Instruction No.7 of 1977", matched with the levels recommended in Section 10.
   Example : Civil engineer with Ir. degree and two years of experience falls under salary group IIIa, level 2. The basic salary of this employee would thus be Rp 37,500/month.

---

* The only other additional staff increase recommended is for the Sub-Directorate for Rural Roads in Jakarta. Since this staffing is to cover service to the entire Republic (not just the four study Provinces), at the direction of the Steering Committee labor costs for this staff was not included.

** This is at the advice of GOI representatives that students attending courses of 6 months or greater duration ordinarily do not receive out-of-station allowances.

2. The welfare contribution is calculated to the following : Efficiency factor x daily productivity factor x tariff

   A. The efficiency factor for all levels of additional employees recommended in this report is 1.5.

   B. The daily productivity factor varies according to the number of working days in a particular month. For purposes of this calculation a 30.4 day month is used. On the basis of this "average month", the daily productivity factor for all levels of additional employees recommended in this report is 572.

   C. The tariff varies according to classification from Rp 10 to Rp 25 for additional employees recommended in this report. Example : Applying this data to the some civil engineer (salary group III a), the monthly welfare contribution is as followes :

$$1.5 \times 572 \times \text{Rp } 25 = \text{Rp } 21{,}450$$

3. Family allowances are calculated as follows :

   A. Wife : 0.05 x basic salary

   B. Children : 0.02 x basic salary

The average employee is assumed to be married and have two children Example : for the same civil engineer, family allowances per month would be :

Wife	:	0.05 x Rp 37,500	= Rp 1,875
Children	:	2 (0.02 x Rp 37,500)	= Rp 1,500
Total monthly family allowances			= Rp 3,375

4. Health contribution is assumed to average Rp 15,000 per month for each employee.

5. Total monthly staff cost is then the total of items 1 through 4. Example. : Based on the foregoing data, the total additional cost for this same civil

engineer employee would be as follows :

A.	Basic wage	—	Rp 37,500
B.	Welfare contribution	—	Rp 21,450
C.	Family allowances	—	Rp 3,375
D.	Health contribution	—	Rp 15,000
		—	Rp 77,325

Additional estimated GOI staff costs by organization, Province and year were totaled and are shown at items 1 a, 1 b, 1 c, and 1 d in Table 9.1.

12.5.2. GOI INSTRUCTORS COSTS

GOI instructor costs were calculated in the same manner as described in 12.5.1 using levels of education and experience equivalent to their local consultant instructor counterpart's listed in Section 13. Estimated GOI instructor costs by location and year are totaled and shown at item 1 e in Table 9.1.

12.5.3. OUT–OF–STATION ALLOWANCES

These costs were estimated for Provincial based GOI instructors for the period they are to attend instructor training in Jakarta, and for students attending training, courses of less than 6 months duration. Daily rate information provided by DGH staff was used :

Rp 21,000/day for individuals in salary group III a of "Governmental Instruction No.7 of 1977" and Rp 17,500 for the remainder (salary groups II a and II b).

A. GOI instructor out-of-station allowances are totaled and shown at Item 1f in Table 9.1.

B. Trainees' out-of-station allowances are totaled and shown at Item 1g in Table 9.1.

12.6. CONSULTANT COSTS

Estimated consultant costs are shown in Table 12.9. A further breakout and basis of rupiah labor and support costs is shown in Table 12.10. Consultant costs are summarized at Item 5 in Table 9.1.

12.7. PHYSICAL PROGRAM EXECUTION

Physical program execution cost estimates include :

(1) Costs of an annual, scheduled, government crew executed District road and bridge maintenance program.

(2) Costs of rehabilitation of District roads and replacement/rehabilitation of District bridges.

(3) Costs of new construction and major upgrade of District roads and bridges.

12.7.1. ANNUAL SCHEDULED MAINTENANCE

Estimated Costs of this program are covered in paragraph 12.1 and are given in Tables 12.2 through 12.5. They are also summarized at Item 6 a in Table 9.1.

12.7.2 REHABILITATION OF ROADS AND BRIDGES

As discussed in Section 7, 8 and 10, the condition of the District roads and bridges compared with the current funding levels, particularly in Aceh and Jambi Provinces, dictate the need for a significant increase in rehabilitation funding. It does not appear feasible from a physical or financial stand point to accomplish needed road and bridge rehabilitation in less than five year's time (including the time needed to develop and implement procedures, procure equipment, recruit and train additional staff and construct additional workshops). Therefore cost estimates/year are based upon accomplishing the basic rehabilitation program in five years.

A. District Road Rehabilitation

The following estimates are based on rehabilitating the kilometers of asphalt and non-asphalt roads in "poor" to "damaged" condition as shown in Section 8, with total costs required to rehabilitate these roads shown in Table 7.3. (unit costs assumed in Table 7.3 are Rp 10 X 10^6/kilometer for asphalt surfaced roads and Rp 5 X 10^6/kilometer for non-asphalt surfaced roads).

Then using the estimated funding requirements and FY 79/80 funding levels shown in Table 7.3; to complete rehabilitation in five years requires :

$$\frac{\text{(Funds Req'd)} - \text{(FY 79/80 Funds)}}{\text{5 years}}$$

Giving :

Aceh	= Rp	2,350 X 10^6/year
Jambi	= Rp	702 X 10^6/year
Central Sulawesi	= Rp	427 X 10^6/year
West Nusa Tenggara	= Rp	449 X 10^6/year

These yearly costs are included in item 6b (1) of Table 9.1.

B. District Bridge - Replacement/Rehabilitation

The following estimates are based on the conditions noted in Section 8 and costs set forth in Table 7.16. These are based on :

(1) Replacing all bridges in "bad" condition.

(2) Replacing/rehabilitating bridges in "poor condition"at an estimated cost equal to 80% of full replacement.

(3) 75% of replacement bridges will be of timber @ Rp 500,000/meter.

(4) 25% of replacement bridges will be of concrete or steel @ Rp 3,000,000/meter.

Then using the estimated funding requirements and FY 79/80 funding levels shown in Table 7.16, to complete rehabilitation/replacement in five years, requires :

$$\text{Yearly cost} = \frac{\text{Funds Req'd) — (FY 79/80 Funds)}}{\text{5 years.}}$$

Giving :

Aceh	=	Rp 2,986 X 10^6/year
Jambi	=	Rp 1,030 X 10^6/year
Central Sulawesi	=	Rp 427 X 10^6/year
West Nusa Tenggara	=	Rp 135 X 10^6/year

These yearly costs are included in Item 6b (2) of Table 9.1.

12.7.3. NEW CONSTRUCTION AND MAJOR UPGRADE OF DISTRICT ROADS AND BRIDGES

No new construction or major upgrade (improvement)* is recommended the first year of the extended five year program since from Section 9 it is seen that development and implementation of selection and planning procedures for new construction will require the first year. (+).

One restraint is the realistic amount funding could be increased and effectively used.

---

* Examples might be replacing a bad timber bridge with a concrete bridge, or widening and paving a dirt road.

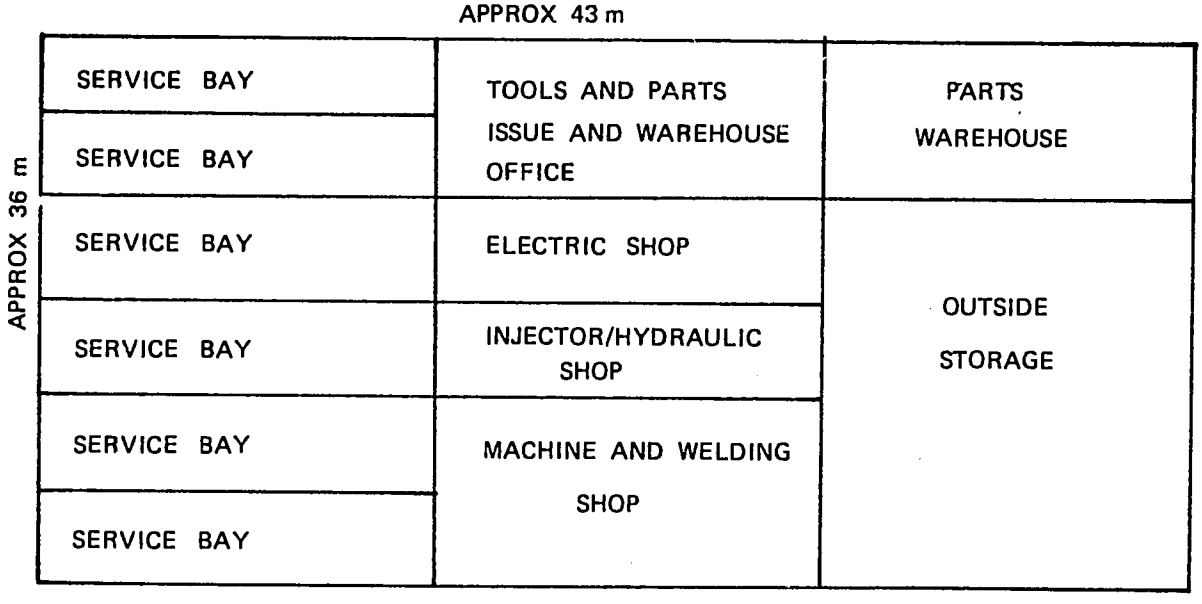
The GOI-Steering Committee advised that the maximum increase of the total physical program funding in any Province (road and bridge maintenance, rehabilitation and new consturction/major upgrade, plus additional staff costs) when measured at the fifth program year should not be greater than 40% of the FY 79/80 base year X 5 years. Thus the estimated funds available to Aceh and Jambi Provinces for new construction costs will be constrained by this restraint (see Figures 9.4 and 9.5). It should be recognized that as the overall physical program, procedures, and road and bridge selection for development methodologies are developed and implemented, some of the roads and bridges in bad or poor shape, may be determined to not be candidates for rehabilitation. Thus some additional funding would be available for new construction and major upgrade.

Another guideline given by the Steering Committee on availability of funds, was that the average of all four study Provinces' annual increase in physical program costs when measured at the fifth year, (as described previously) should be held to 30%. This restraint dictates the maximum new construction/major upgrade funding available for Central Sulawesi and West Nusa Tenggara Provinces. However, this restraint is not overly restrictive and having significantly less rehabilitation to accomplish, these two Provinces can more effectively pursue a new construction/major upgrade program.

Taking into account the above parameters the "new construction/major upgrade" costs estimates were approached/determined from the basis of funds availability, (See Figures 9.3 through 9.6). These estimates are summarized at Item 6c in Table 9.1.

It is emphasized that these estimates for new construction/major upgrade are of orders-of-magnitude and tentative. An essential feature of the implementation program will be to refine these estimates; initially and annually as the program progresses.

FIGURE NO.12.1
SCHEMATIC LAYOUT OF
TYPICAL PROVINCIAL WORKSHOP



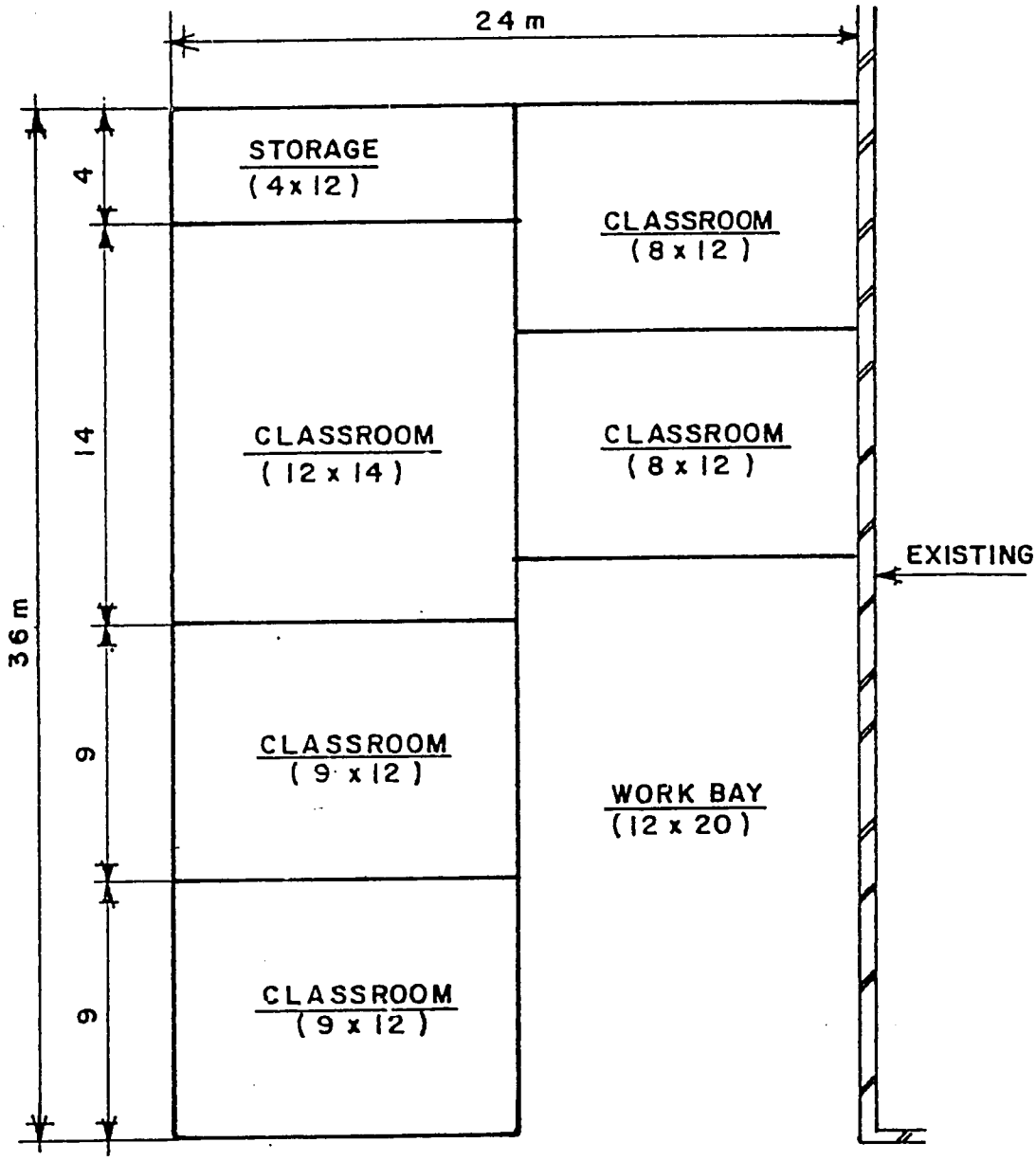
NOTE : (1) Construction to be reinforced concrete footings and slab, concrete block wall and partitions, open web steel trusses, corrugated cement asbestos roofing.

(2) Office, toilets, lunch room, and meeting room located over the shops area.

(3) Approximately 1120 m^2 total ground floor area, approximately 450 m^2 total second floor area, approximately 430 m^2 total outside storage area.

FIGURE NO. 12.2

TYPICAL PROVINCIAL WORKSHOP TRAINING FACILITY



NOTES :

1. CONSTRUCTION TO BE REINFORCED CONCRETE FOOTINGS & SLAB, CONCRETE BLOCK WALLS & PARTITIONS, OPEN WEB STEEL TRUSSES, CORRUGATED CEMENT ASBESTOS ROOFING
2. APPROXIMATELY 864 m^2 TOTAL AREA
3. APPROXIMATELY Rp. 86,400,000.00 CONSTRUCTION COST ($ 138,000.00)
4. FOUR FACILITIES TO BE CONSTRUCTED, ONE IN EACH OF THE STUDY PROVINCES.

TOTAL CONSTRUCTION COST = Rp. 345,600,000

TABLE 12.1

DISTRICT ROADS MAINTENANCE EQUIPMENT ACQUISITION COSTS *

EQUIPMENT DESCRIPTION	YEAR # 1		YEAR # 2		YEAR # 3		YEAR # 4		YEAR # 5		TOTALS	
	QUAN.	COST RP x 10^6	QUAN.	COST RP x 10^6	QUAN.	COST RP x 10^6	QUAN.	COST RP x 10^6	QUAN.	COST RP x 10^6	QUAN.	COST RP x 10^6
PICKUP	36	126	16	56	12	42	10	41	10	41	84	306
FARM TRACTOR W/ BACKHOE & LOADER ATTACHMENTS	18	563	10	313	10	313	6	188	6	188	50	1,565
FARM TRACTOR W/ MOWER & LOADER ATTACHMENTS	18	450	10	250	10	250	6	150	6	150	50	1,250
DUMP TRUCK (4 m^3)	72	855	36	428	32	380	22	261	22	261	184	2,185
MOTOR GRADER W/ SCARIFIER (CAT. 120B)	18	1,305	10	725	10	725	6	435	6	435	50	3,625
ROAD ROLLER (8.5TON)	36	844	16	375	12	281	10	234	10	234	84	1,968
VIBRATORY COMPACTOR (CASE W 55)	36	214	16	95	12	71	10	59	10	59	84	498
BITUMEN SPRAYER (TRAILER MOUNTED)	18	56	8	25	6	19	5	16	5	16	42	132
MECH. TAMPER	36	68	16	30	12	23	10	19	10	19	84	159
T O T A L S		4,481		2,297		2,104		1,403		1,403		11,688

* THE EQUIPMENT COSTS SHOWN HERE MAY NOT AGREE WITH THE COSTS SHOWN ON TABLES 12.2 THROUGH 12.5 DUE TO ROUNDING OFF.
COSTS ARE BASED ON DATA FURNISHED BY LOCAL SUPPLIERS

TABLE 12.2

ACEH PROVINCE
DISTRICT ROADS
EQUIPMENT ACQUISITION & OPERATING COSTS
FOR SCHEDULED ROAD MAINTENANCE

DISTRICT	YEAR # 1			YEAR # 2			YEAR # 3			YEAR # 4			YEAR # 5			TOTALS		TYPE OF CREW(1)	
	NO OF CREWS / KM	EQUIP.(3) COST x10^6 (3)	OPER. COST x10^6 (4)	NO OF CREWS / KM	EQUIP.(3) COST x10^6 (3)	OPER. COST x10^6 (4)	NO OF CREWS / KM	EQUIP(3) COST x10^6 (3)	OPER. COST x10^6 (4)	NO OF CREWS / KM	EQUIP(3) COST x10^6 (3)	OPER. COST x10^6 (4)	NO OF CREWS / KM	EQUIP(3) COST x10^6 (3)	OPER. COST x10^6 (4)	KM	MP x10^6	E	L
EAST ACEH	1 / 236	401	101	2 / 339	401	202	2 / 474	-0-	202	3 / 573	401	303	3 / 712	-0-	303	718	2,314	X	
ACEH BESAR (2)	1 / 198	90	108	2 / 300	90	210	2 / 405	-0-	210	3 / 610	90	315	4 / 735	90	420	738	1,620		X
PIDIE	-0- / -0-	-0-	-0-	1 / 220	90	108	2 / 370	90	210	3 / 820	90	315	3 / 853	-0-	315	853	1,218		X
NORTH ACEH	-0- / -0-	-0-	-0-	1 / 208	401	101	2 / 310	401	202	2 / 413	-0-	202	3 / 520	401	303	520	2,014	X	
SOUTH EAST ACEH	-0- / -0-	-0-	-0-	-0- / -0-	-0-	-0-	1 / 178	401	101	1 / 178	-0-	101	1 / 178	-0-	101	178	704	X	
CENTRAL ACEH	-0- / -0-	-0-	-0-	-0- / -0-	-0-	-0-	-0- / -0-	-0-	-0-	-0- / -0-	-0-	-0-	1 / 232	401	101	232	808	X	
WEST ACEH	2 / 388	802	202	2 / 420	-0-	202	3 / 812	401	303	3 / 812	-0-	303	3 / 812	-0-	303	812	2,818	X	
SOUTH ACEH	-0- / -0-	-0-	-0-	-0- / -0-	-0-	-0-	1 / 207	401	101	1 / 277	-0-	101	2 / 347	401	202	347	1,208	X	
REPR. NORTH ACEH	2 / 382	180	210	2 / 382	-0-	210	2 / 382	0	210	2 / 445	-0-	210	3 / 528	90	318	528	1,436		X
SUB - TOTALS	8 / 1,122	1,473 (5)	818	10 / 1,842	982 (5)	1,030	15 / 2,119	1,694 (5)	1,339	18 / 3,531	88 (5)	1,850	23 / 4,419	1,383 (5)	2,363	4,418	13,813	6	3
TOTALS		2,091			2,012			3,233			2,431			3,746		4,418	13,813	6	3

NOTE: (1) TYPE OF CREW — E = EQUIPMENT INTENSIVE; L = LABOR INTENSIVE

(2) INCLUDES CITIES OF BANDA ACEH & SABANG

(3) THIS COLUMN SHOWS EQUIPMENT ACQUISITION COSTS ONLY

(4) THIS COLUMN SHOWS OPERATING COSTS, WHICH INCLUDES ALLOWANCES FOR EQUIPMENT DEPRECIATION OVER A FIVE YEAR PERIOD, SPARE PARTS, REPAIRS, FUEL, OIL, LUBRICANTS & OPERATOR.

(5) EQUIPMENT COSTS ARE BASED ON DATA FURNISHED BY LOCAL SUPPLIERS.
THE EQUIPMENT COSTS SHOWN HERE MAY NOT AGREE WITH COSTS SHOWN ON TABLE NO. 12.1 DUE TO ROUNDING OFF.

TABLE 12.3

JAMBI PROVINCE
DISTRICT ROADS
EQUIPMENT ACQUISITION & OPERATING COSTS FOR SCHEDULED ROAD MAINTENANCE

DISTRICT	YEAR # 1			YEAR # 2			YEAR # 3			YEAR # 4			YEAR # 5			TOTALS		TYPE OF CREW (1)	
	NO. OF CREWS / KM	EQUIP(2) COST x 10^6 (4)	OPER. COST x 10^6 (3)	NO. OF CREWS / KM	EQUIP(2) COST x 10^6 (4)	OPER. COST x 10^6 (3)	NO. OF CREWS / KM	EQUIP(2) COST x 10^6 (4)	OPER. COST x 10^6 (3)	NO. OF CREWS / KM	EQUIP(2) COST x 10^6 (4)	OPER. COST x 10^6 (3)	NO. OF CREWS / KM	EQUIP(2) COST x 10^6 (4)	OPER. COST x 10^6 (3)	KM	RP x 10^6	E	L
BATANGHARI	2 / 388	802	202	2 / 400	-0-	202	2 / 430	-0-	202	2 / 460	-0-	202	2 / 478	-0-	202	478	1,812	X	
BUNGO TEBO	1 / 132	401	101	1 / 200	-0-	101	1 / 260	-0-	101	2 / 300	401	202	2 / 326	-0-	202	326	1,509	X	
KERINCI	1 / 131	80	105	1 / 170	-0-	105	1 / 200	-0-	105	1 / 230	-0-	105	1 / 265	-0-	105	265	815		X
SARKO	-0- / -0-	-0-	-0-	1 / 80	401	101	1 / 100	-0-	101	1 / 200	-0-	101	1 / 265	-0-	101	265	805	X	
TANJUNG JABUNG	-0- / -0-	-0-	-0-	1 / 50	80	105	1 / 100	-0-	105	1 / 140	-0-	105	1 / 183	-0-	105	183	801		X
SUB - TOTALS	4 / 618	1,283 (4)	408	6 / 700	481 (4)	614	6 / 1,090	-0-	614	7 / 1,330	401 (4)	715	7 / 1,917	-0-	715	1,817	5,251		
TOTALS		1,701			1,108			614			1,116			715		1,817	5,251	3	2

NOTE : (1) TYPE OF CREW + E = EQUIPMENT INTENSIVE
L = LABOR INTENSIVE

(2) THIS COLUMN SHOWS EQUIPMENT ACQUISITION COSTS ONLY.

(3) THIS COLUMN SHOWS OPERATING COSTS, WHICH INCLUDES. ALLOWANCES FOR EQUIPMENT DEPRECIATION OVER A FIVE YEAR PERIOD, SPAREPARTS, REPAIRS, FUEL, OIL, LUBRICANTS & OPERATOR.

(4) EQUIPMENT COSTS ARE BASED ON DATA FURNISHED BY LOCAL SUPPLIERS. THE EQUIPMENT COSTS SHOWN HERE MAY NOT AGREE WITH COSTS SHOWN ON TABLE NO. 12.2 DUE TO ROUNDING OFF.

TABLE 12.4

CENTRAL SULAWESI PROVINCE
DISTRICT ROADS

EQUIPMENT ACQUISITION & OPERATING COSTS FOR SCHEDULED ROAD MAINTENANCE

DISTRICT	YEAR # 1			YEAR # 2			YEAR # 3			YEAR # 4			YEAR # 5			TOTALS		TYPE OF CREW (1)	
	NO. OF CREWS / KM	EQUIP.(2) COST x 10^6 (4)	OPER. COST x 10^6 (3)	NO. OF CREWS / KM	EQUIP.(2) COST x 10^6 (4)	OPER. COST x 10^6 (3)	NO. OF CREWS / KM	EQUIP.(2) COST x 10^6 (4)	OPER. COST x 10^6 (3)	NO. OF CREWS / KM	EQUIP.(2) COST x 10^6 (4)	OPER. COST x 10^6 (3)	NO. OF CREWS / KM	EQUIP.(2) COST x 10^6 (4)	OPER. COST x 10^6 (3)	KM	RP x 10^6	E	L
DONGGALA	2 / 291	180	210	2 / 364	-0-	210	2 / 364	-0-	210	2 / 364	-0-	210	2 / 364	-0-	210	364	1,230		X
POSO	-0- / 0	-0-	-0-	-0- / 0	-0-	-0-	1 / 200	401	101	2 / 496	401	202	2 / 496	-0-	202	496	1,307	X	
LUWUK	-0- / -0-	-0-	-0-	1 / 123	401	101	1 / 123	-0-	101	1 / 123	-0-	101	1 / 123	-0-	101	123	808	X	
TOLI TOLI	-0- / -0-	-0-	-0-	1 / 136	401	101	1 / 136	-0-	101	1 / 136	-0-	101	1 / 136	-0-	101	136	808	X	
SUB – TOTALS	2 / 291	180 (4)	210	4 / 823	802 (4)	412	5 / 823	401 (4)	513	6 / 1,119	401 (4)	614	6 / 1,119	-0-	614	1,119	4,147		
TOTALS		390			1,214			914			1,018			614		1,119	4,147	3	1

NOTE: (1) TYPE OF CREW — E = EQUIPMENT INTENSIVE; L = LABOR INTENSIVE

(2) THIS COLUMN SHOWS EQUIPMENT ACQUISITION COSTS ONLY.

(3) THIS COLUMN SHOWS OPERATING COSTS, WHICH INCLUDES ALLOWANCES FOR EQUIPMENT DEPRECIATION OVER A FIVE YEAR PERIOD, SPAREPARTS, REPAIRS, FUEL OIL & LUBRICANTS, OPERATOR.

(4) EQUIPMENT COSTS ARE BASED ON DATA FURNISHED BY LOCAL SUPPLIERS. THE EQUIPMENT COSTS SHOWN HERE MAY NOT AGREE WITH COSTS SHOWN ON TABLE NO. 12.2 DUE TO ROUNDING OFF.

TABLE 12.5

WEST NUSA TENGGARA PROVINCE
DISTRICT ROADS

EQUIPMENT ACQUISITION & OPERATING COSTS FOR SCHEDULED ROAD MAINTENANCE

DISTRICT	YEAR # 1			YEAR # 2			YEAR # 3			YEAR # 4			YEAR # 5			TOTALS		TYPE OF CREW (1)	
	NO OF CREWS / KM	EQUIP(2) COST $\times 10^6$ (4)	OPER. COST $\times 10^6$ (3)	NO OF CREWS / KM	EQUIP(2) COST $\times 10^6$ (4)	OPER. COST $\times 10^6$ (3)	NO OF CREWS / KM	EQUIP(2) COST $\times 10^6$ (4)	OPER. COST $\times 10^6$ (3)	NO OF CREWS / KM	EQUIP(2) COST $\times 10^6$ (4)	OPER. COST $\times 10^6$ (3)	NO OF CREWS / KM	EQUIP(2) COST $\times 10^6$ (4)	OPER. COST $\times 10^6$ (3)	KM	RP $\times 10^6$	E	L
WEST LOMBOK	1 / 101	90	105	1 / 126	-0-	105	1 / 135	-0-	105	1 / 180	-0-	105	1 / 212	-0-	105	212	618		X
CENTRAL LOMBOK	1 / 123	90	105	1 / 184	-0-	105	1 / 195	-0-	105	1 / 220	-0-	105	1 / 230	-0-	105	230	618		X
EAST LOMBOK	1 / 148	90	105	1 / 178	-0-	105	1 / 178	-0-	105	1 / 178	-0-	105	1 / 178	-0-	105	178	618		X
SUMBAWA	1 / 89	401	101	1 / 114	-0-	101	1 / 159	-0-	101	1 / 204	-0-	101	1 / 280	-0-	101	280	906	X	
DOMPU	1 / 107	401	101	1 / 148	-0-	101	1 / 148	-0-	101	1 / 148	-0-	101	1 / 148	-0-	101	148	906	X	
BIMA	1 / 101	401	101	1 / 143	-0-	101	1 / 143	-0-	101	1 / 143	-0-	101	1 / 143	-0-	101	143	906	X	
SUB-TOTALS	6 / 680	1,403 (4)	618	6 / 870	-0-	618	6 / 978	-0-	618	6 / 1070	-0-	618	6 / 1178	-0-	618	1,178	4,563	3	3
TOTALS		2,091			618			618			618			618		1,178	4,563	3	3

NOTE:

(1) TYPE OF CREW — E = EQUIPMENT INTENSIVE; L = LABOR INTENSIVE

(2) THIS COLUMN SHOWS EQUIPMENT ACQUISITION COSTS ONLY.

(3) THIS COLUMN SHOWS OPERATING COSTS, WHICH INCLUDES. ALLOWANCES FOR EQUIPMENT DEPRECIATION OVER FIVE YEAR PERIOD, SPAREPARTS, REPAIRS, FUEL, OIL, LUBRICANTS & OPERATOR

(4) EQUIPMENT COSTS ARE BASED ON PURNISHED BY LOCAL SUPPLIERS.

THE EQUIPMENT COSTS SHOWN HERE MAY NOT AGREE WITH COSTS SHOWN ON TABLE NO. 12.2 DUE TO ROUNDING OFF

TABLE 12.6

TRAINING COURSE : SUMMARY OF COURSE UNIT LENGTHS, TEACHING HOURS, ESTIMATED COURSE PREPARATION HOURS & COSTS

COURSE NO	COURSE UNITS WHICH REQUIRE SEPARATE LESSON PREPARATION *			REMARKS
	INDEPENDENT COURSE UNIT LENGTH* (WKS)	TEACHING HOURS	EST'D COURSE** PREPARATION HRS	
11.1	12	360	540	
11.2	16	480	720	
11.3	24	720	1080	
11.4	48	1440	1260	
11.5	34	1020	893	
11.6	36	1080	1620	
11.7	4	120	105	
11.8	48	1440	1260	
11.9	–	–	–	All course units included in other courses
11.10	39	1170	1024	
11.11	8	240	210	
11.12	4	120	105	
11.13	17	510	446	
11.14	1	30	26	
11.15	26	780	1170	
11.16	–	–	–	All course units included in other courses
11.17	–	–	–	All course units included in other courses
11.18	12	360	315	
11.19	12	360	315	
11.20	8	240	360	
Totals	349	10470	11449	

Estimated costs : course preparation = 179.0
(RP X 10^6)*** translation = 3.2

(Notes on next page)

TABLE 12.6

TRAINING COURSE : SUMMARY OF COURSE LENGTHS, TEACHING HOURS & PREPARATION HOURS AND COSTS

NOTES :

* A number of courses include units which are common to two or more courses. The "Course Length" for each such unit is included in the table only for one numbered course so as to avoid duplication and provide a proper base for estimating course preparation hours. For example course 11.7 is a 12 months course of which all but 4 weeks are common to another course. See Tables 11.1 through 11.20 for actual course lengths.

** Estimates of course preparation hours are based upon the following assumptions.

1. All course teaching hours are 30 hours per week.
2. Existing course materials and manufacturers'manuals are available and will be adapted and utilized, particularly for the equipment related courses, to a significant degree. Availability of such course materials and manuals will affect the estimated course preparation hours accordingly.
3. All equipment operations courses and courses associated with equipment maintenance and repair (11.4, 11.5, 11.7, 11.8, 11.9, 11.10, 11.11, 11.12, 11.13, 11.14, 11.18 and 11.19) will require 2 hours of course preparation time for each hour of classroom instruction, and 1/2 hour of course preparation time for each hour of practical or field instruction. Classroom instruction will consume 25% of the teaching hours, practical or field instruction will use the remaining 75%. Thus .875 hours of course preparation will be required for each total hour of teaching time.
4. All other courses (11.1, 11.2, 11.3, 11.6, 11.15, 11.16, 11.17, and 11.20) will require 2 hours of course preparation time for each hour of classroom instruction, and 1 hour of course preparation time for each hour of seminar and practical exercise type instruction. Classroom instruction will consume 50% of the teaching hours, seminars and practical exercises will use the remaining 50%. Thus 1.5 hours of course preparation time will be required for each total hour of teaching time.
5. Translation effort is assumed to be an additional 10% of course preparation time, or 1150 hours.

(Notes continued on next page)

TABLE 12.6

TRAINING COURSE : SUMMARY OF COURSE LENGTHS, TEACHING HOURS & COURSE PREPARATION HOURS AND COSTS

NOTES (CONTINUED)

*** Estimated costs for course preparation :

1. Offshore : $ 25/hr X 11,449 hrs = $ 286,225
   @ Rp 625/$ = Rp 178,891,000
   call = Rp 179,000,000

2. Incountry :

   (a) Costs of integration of new procedures, standards, manuals, etc produced by GOI staff with close consultant assistance are included in the in-country technical and training personnel man-months, paragraph 12.6.

   (b) Translation of course material into Indonesian :
   1150 hrs X 1/174 man-mos/hr X Rp 480,000/month = Rp 3.172,000
   call = Rp 3,200,000

TABLE NO.12.7

TRAINING EQUIPMENT

COST ESTIMATE

EQUIPMENT DESCRIPTION	A C E H		JAMBI		W.N.T.		C. SUL		TOTAL RP X 10^6
	QUAN	COST RP X 10^6	QUAN	COST RP X 10^6	QUAN	COST RP X 10^6	QUAN	COST RP X 10^6	
Farm Tractor with Backhoe & Loader Attachment	2	64	1	31	1	31	1	31	157
Farm Tractor with Mower & Loader Attachment	2	50	1	25	1	25	1	25	125
Dump Truck (4 m^3)	5	60	2	24	2	24	2	24	132
Motor Grade with Scarifier (Cat. 120 B or equiv.)	2	146	1	73	1	73	1	73	365
Road Roller (8.5 ton)	3	71	1	24	1	24	1	24	143
TOTALS – RP X 10^6		391		177		177		177	922

NOTE : (1) The equipment costs shown above are based upon data obtained from local representatives of equipment manufacturers.

(2) The equipment shown above is required for training of equipment operators and field inspectors, (ref. courses 11.11, 11.12, 11.13, and 11.14).

(3) The equipment shown above will be used from the equipment procured for the road maintenance program, thus it is not an additive cost to the overall equipment requirements for operations.

TABLE 12.8.
TRAINING AIDS
ESTIMATES

ITEM NO.	D E S C R I P T I O N	PRICE EACH (RP)	NO. REQ'D	TOTAL PRICE (RP)	DATA SOURCE *
1.	35 mm Slide projectors w/remote control & cassette interlock 220 V – 50 cycle.	109,375	24	2,625,000	L
2.	Opaque projector – 220 V – 50 cycle	250,000	10	2,500,000	C
3.	Overhead projector w/transparency reproduction machine 220 V – 50 cycle	215,000	10	2,150,000	L
4.	16 mm sound projector w/remote speaker 220 V – 50 cycle	1,350.000	5	6,750,000	L
5.	Cassette recorder/player w/internlock (see item # 1) 220 V – 50 cycle	156,250	10	1,562,500	C
6.	Projectors screens – "DAYLITE" 50" x 50" portable	31,250	24	750,000	L
7.	Magnetic boards – 36" x 60" w/accessories	62,500	24	1,500,000	L
8.	Reproduction machines – 220 V – 50 cycle (use equip. provided for the Consultant's provincial & Jkt offices)	–	–	–	–
9.	Textbook – Finance & Budgeting for Administrator	31,250	54	1,687,500	C
10.	Textbook – "Moving the Earth"	31,250	236	7,406,250	C
11.	Textbook – Management Development	31,250	71	2,218,750	C
12.	Textbook – Basic Supervision	31,250	208	6,500,000	C
13.	Textbook – Basic Administrative Procedures	31,250	208	6,500,000	C

* L = Local supplier (s). C = Consultant's independent estimate.

SHEET 1 OF 6

TABLE 12.8.
TRAINING AIDS
ESTIMATES

ITEM NO.	D E S C R I P T I O N	PRICE EACH (RP)	NO. REQ'D	TOTAL PRICE (RP)	DATA SOURCE *
14.	Textbook — Management By Objectives	31,250	91	2,843,750	C
15.	Manual — Machine Shop Measuring Tools & Instruments	31,250	20	625,000	C
16.	Manual — Metals & Metalurgy	31,250	20	625,000	C
17.	Manual — Machine Shop Tools & Machines	31,250	20	625,000	C
18.	Vernier Calipers (Inside & Outside) Metric	12,500	8	100,000	L
19.	Vernier Calipers (Inside & Outside) Inch	12,500	8	100,000	L
20.	Micrometer (Inside) Metric	85,000	8	680,000	L
21.	Micrometer (Outside) Metric	85,000	8	680.000	L
22.	Micrometer (Inside) Inch	85,000	8	680,000	L
23.	Micrometer (Outside) Inch	85,000	8	680,000	L
24.	Feeler Gauge Set — Metric	12,500	8	100,000	L
25.	Feeler Gauge Set — Inch	12,500	8	100,000	L
26.	Dial Indicator Set — Metric	85,000	8	680,000	C
27.	Dial Indicator Set — Inches	85,000	8	680,000	C
28.	Surface Plate 20" x 20"	156,250	4	625,000	C
29.	Manual — Warehouse & Stock Control	31,250	20	625,000	C

* L = Local supplier (s). C = Consultant's independent estimate.

TABLE 12.8.
TRAINING AIDS
ESTIMATES

ITEM NO.	D E S C R I P T I O N	PRICE EACH (RP)	NO. REQ'D	TOTAL PRICE (RP)	DATA SOURCE *
30.	Sample Kardex System	312,500	1	312,500	C
31.	Sample Microfishe System	625,000	1	625,000	C
32.	Textbook — Road & Highway Data Collection & Analysis	31,250	192	6,000,000	C
33.	Textbook — Road & Highway Planning & Programming	31,250	92	2,875,000	C
34.	Cut — Away Diesel Engine (on movable stand)	— 0 —	4	Class Project	
35.	Cut — Away Gasoline Engine (on movable stand)	— 0 —	4	Class Project	
36.	Cut — Away Clutch Assembly	— 0 —	4	Class Project	
37.	Cut — Away Torque Converter	— 0 —	4	Class Project	
38.	Cut — Away Final Drive (Differential)	— 0 —	4	Class Project	
39.	Diesel Engine (on stand) Operating	1,000,000	8	8,000,000	L
40.	Gasoline Engine (on stand) Operating	281,250	8	2,250,000	L
41.	Mock-up Fuel System (Gasoline Engine)	312,500	4	1,250,000	C
42.	Mock-up Fuel System (Diesel Engine)	312,500	4	1,250,000	C
43.	Mock-up Streering System (Mech)	312,500	4	1,250,000	C
44.	Mock-up Braking System (Power Assist)	312,500	4	1,250,000	C
45.	Mock-up Braking System (Manual)	312,500	4	1,250,000	C

* L = Local supplier (s). C = Consultant's independent estimate.

TABLE 12.8.
TRAINING AIDS
ESTIMATES -

ITEM NO.	D E S C R I P T I O N	PRICE EACH (RP)	NO. REQ'D	TOTAL PRICE (RP)	DATA SOURCE *
46.	Mock - up Braking System (Power Assist)	312,500	4	1,250,000	C
47.	Mock - up Steering Clutch Assy	312,500	4	1,250,000	C
48.	Mock - up Ignition System	312,500	4	1,250,000	C
49.	Mock - up Electrical System	312,500	4	1,250,000	C
50.	Mock - up Engine Water Cooling System	312,500	4	1,250,000	C
51.	Mock - up Engine Oil Cooling System	312,500	4	1,250,000	C
52.	Schematic Chart — Fuel System (Diesel Engine)	31,250	4	125,000	C
53.	Schematic Chart — Fuel System (' gasoline Enginee)	31,250	4	125,000	C
54.	Schematic Chart — Hydraulic System	31,250	4	125,000	C
55.	Schematic Chart — Drive Train	31,250	4	125,000	C
56.	Schematic Chart — Braking System (Manual)	31,250	4	125,000	C
57.	Schematic Chart — Braking System (Power Assist)	31,250	4	125,000	C
58.	Schematic Chart — Ignition System	31,250	4	125,000	C
59.	Schematic Chart — Electrical System	31,250	4	125,000	C
60.	Schematic Chart — Steering System (Manual)	31,250	4	125,000	C
61	Schematic Chart — Point Lubrication System	31,250	4	125,000	C

* L = Local supplier (s). C = Consultant's independent estimate.

SHEET 4 OF 6

TABLE 12.8.
TRAINING AIDS
ESTIMATES

ITEM NO.	D E S C R I P T I O N	PRICE EACH (RP)	NO. REQ'D	TOTAL PRICE (RP)	DATA SOURCE *
62.	Schematic Chart — Steering System (Power Assist)	31,250	4	125,000	C
63.	Schematic Chart — Engine Water Cooling System	31,250	4	125,000	C
64.	Schematic Chart — Engine Oil System	31,250	4	125,000	C
65.	Schematic Chart — Turbo Charger	31,250	4	125,000	C
66.	Schematic Chart — Engine Lubricating System	31,250	4	125,000	C
67.	Schematic Chart — Diesel Engine Injection System	31,250	4	125.000	C
68.	Mechanics Hand Tool Sets (Mounted on Shadow Boards)	375,000	20	7,500.000	L
69.	Cut—Away Generator	— 0 —	4	Class Project	
70.	Cut—Away Alternator	— 0 —	4	Class Project	
71.	Manual — Automotive Ignition Systems	31,250	20	625,000	C
72.	Manual — Automotive Electrical Systems	31,250	20	625,000	C
73.	Textbook — Design of Rural Roads	31,250	62	1,937,500	C
74.	Textbook — Design of Bridges	31,250	37	1,156,250	C
75.	Textbook — Route Surveying	31,250	29	906,250	C
76.	Transit	1,775,000	2	3,550,000	L
77.	Level	800,000	2	1,600,000	L

* L = Local supplier (s). C = Consultant's independent estimate.

TABLE 12.8.
TRAINING AIDS
ESTIMATES

ITEM NO.	D E S C R I P T I O N	PRICE EACH (RP)	NO. REQ'D	TOTAL PRICE (RP)	DATA SOURCE *
78.	Plane Table	312,500	2	625,000	L
79.	Manual — Network Diagramming (CPM/Pert)	31,250	62	1,937,500	C
80.	Rods, Range Poles, Stakes, Chains, etc.	312,500	4	1,250,000	C
	T O T A L		CALL	110.6 X 10^6	
	NOTE : Not shown in this estimate are specific equipment manuals, reference texts, design and construction standards and manuals, traffic survey procedures, etc (including those to be developed by the Sub-Directorate for Rural Roads with consultant assistance). These are to be identified and incorporated into course outlines and specific lesson plans as the outlines and plans are developed and written.				

* L = Local supplier (s). C = Consultant's independent estimate.

SHEET 6 of 6

TABLE 12.9
ESTIMATED CONSULTANT COSTS
(IN $ 1,000 US DOLLARS AND 1,000,000 RP @ 625/$)

	TOTAL				JAKARTA				ACEH			
	Grand Total	I	II	III	Total	I	II	III	Total	I	II	III
1. FOREIGN CURRENCY COSTS ((in 10^3 U.S $)												
1.1. LABOR												
1.1.1. Expat In-country wages (443 man-months) @ $ 6,500/m-m	2879.5	2002.0	760.5	117.0	1163.5	799.5	247.0	117.0	383.5	266.5	117.0	
1.1.2. H.O. Labor @ 5% In-country	144	100.1	38	5.9	144	100.1	38	5.9				
LABOR SUBTOTAL	3023.5	2102.1	798.5	122.9	1307.5	899.6	285.0	122.9	383.5	266.5	117.0	
1.2. INOCULATIONS, PHYSICAL EXAMS @ $ 300/Expatriate	9.9	9.9			4.2	4.2			1.2	1.2		
1.3. INTERNATIONAL TRAVEL												
1.3.1. Air Fare Expats. 33 RT (66 one way) @ $ 2000 RT	66.0	47.0	16.0	3.0	28.0	24.0	1.0	3.0	8.0	5.0	3.0	
Principals, 6 RTs at $ 2000	12.0	6.0	4	2	12	6	4	2				
1.3.2. INTERNATIONAL PER DIEM												
33 x 4 @ $ 50	6.6	4.7	1.6	0.3	2.8	2.4	0.1	0.3	0.8	0.5	0.3	
Principals : 6 x 6 @ $ 50	1.2	0.6	0.4	0.2								
TRAVEL SUBTOTAL	85.8	58.3	22.0	5.5	42.8	32.4	5.1	5.3	8.8	5.5	3.3	
1.4 SHIP PERSONAL EFFECTS 33 expats @ 800	26.4	18.8	6.4	1.2	11.2	9,6	0.4	1.2	3.2	2.0	1.2	
1.5 STORE HOUSE. HOLD GOODS 443 man-mos @ $ 100/Months	44.4	30.8	11.7	1.8	17.9	12.3	3.8	1.8	5.9	4.1	1.8	
1.6 PURCHASE TECHNICAL BOOKS	3.0	3.0			3.0	3.0						
1.7. SHIP TECHNICAL BOOKS	3.0	3.0			3.0	3.0						
1.8. FEE FOR PROFIT @ 10% In-cpuntry labor	288.0	200.2	76.1	11.7	116.4	80.0	24.7	11.7	38.4	26.7	11.7	
T O T A L	3483.9	2426.1	914.7	143.1	1506.0	1044.1	319.0	142.9	441.0	306.0	135.0	0
(Equivalent RP X 10^6)	(2177.4)	(1516.3)	(571.7)	(89.4)	(941.3)	(652.6)	(199.4)	(89.3)	(275.6)	(191.3)	(84.4)	(0)

TABLE 12.9
ESTIMATED CONSULTANT COSTS
(IN $ 1,000 US DOLLARS AND 1,000,000 RP @ 625/$)

	TOTAL				JAKARTA				ACEH			
	Grand Total	I	II	III	Total	I	II	III	Total	I	II	III
2. RUPIAH COSTS (In 10^6 x Rp)												
2.1. LABOR INDONESIAN CONSULTANTS, PLUS ADMIN SPT (LABOR AND FEE)	656.1	393.6	229.6	32.9	164.0	98.4	57.4	8.2	136.0	81.6	47.6	6.8
2.2. SUPPORT												
2.2.1. Office furn, equipt, vehicles, repro, communication, incountry travel, local employees out-of-station allows, etc.	737.1	554.8	107.0	75.3	189.3	142.0	27.6	19.7	159.2	120.2	23.0	16.0
2.2.2. Expatriate housing allows assume $ 50 (Rp 31,250) per day in provinces & $ 66 (Rp 41,250)/day in Jakarta.	476.9	331.1	123.2	22.6	225.1	154.7	47.8	22.6	56.3	39.1	17.2	
SPT SUBTOTAL	1214.0	885.9	230.2	97.9	414.4	296.7	75.4	42.3	215.5	159.3	40.2	16.0
T O T A L	1870.1	1279.5	459.8	130.8	578.4	395.1	132.8	50.5	351.5	240.9	87.8	22.8
3. COMBINED COSTS												
3.1. FOREIGN CURRENCY IN RUPIAH X 10^6	2177.4	1516.3	571.7	89.4	941.3	652.6	199.4	89.3	275.7	191.3	84.0	0
3.2 RUPIAH COSTS (RP X 10^6)	1870.1	1279.5	459.8	130.8	578.4	395.1	132.8	50.5	351.5	240.9	87.8	24.8
GRAND TOTAL (RP X 10^6)	4047.5	2795.8	1031.5	220.2	1519.7	1047.7	332.2	139.8	627.2	432.2	172.2	24.8
EQUIV. U.S. DOLLARS ($ X 10^3)	6476.2	4473.4	1650.4	352.3	2431.5	1676.4	531.6	223.7	1003.6	691.6	275.6	39.7

TABLE 12.9
ESTIMATED CONSULTANT COSTS
(IN $ 1,000 US DOLLARS AND 1,000,000 RP @ 625/$)

	JAMBI				CENTRAL SULAWESI				WEST NUSA TENGGARA			
	Total	I	II	III	Total	I	II	III	Total	I	II	III
1. FOREIGN CURRENCY COSTS (in 10^3 U.S. $)												
1.1. LABOR												
1.1.1. Expat In-country wages (443 man-months) @ $ 6500 / m-m	383.5	266.5	117.0		383.5	266.5	117.0		565.5	403.0	162.5	
1.1.2. H.O. Labor @ 5% In-country												
LABOR SUBTOTAL	383.5	266.5	117.0		383.5	266.5	117.0		565.5	403.0	162.5	
1.2. INOCULATIONS, PHYSICAL EXAMS @ $ 300/Expatriate	1.2	1.2			1.2	1.2			2.1	2.1		
1.3 INTERNATIONAL TRAVEL												
1.3.1. Air Fare Expats 33 RT (66 one way) @ $ 2000 RT Principals,6 RTs at $ 2000	8.0	5.0	3.0		8.0	5.0	3.0		14.0	8.0	6.0	
1.3.2. INTERNATIONAL PER DIEM 33 x 4 @ $ 50 Principals; 6 x 6 @ $ 50	0.8	0.5	0.3		0.8	0.5	0.3		1.4	0.8	0.6	
TRAVEL SUBTOTAL	8.8	5.5	3.3		8.8	5.5	3.3		15.4	8.8	6.6	
1.4 SHIP PERSONAL EFFECTS 33 Expats @ $ 800	3.2	2.0	1.2		3.2	2.0	1.2		5.6	3.2	2.4	
1.5 STORE HOUSE HOLD GOODS 443 man-mos @$100 / month	5.9	4.1	1.8		5.9	4.1	1.8		8.7	6.2	2.5	
1.6. PURCHASE TECHNICAL BOOKS												
1.7. SHIP TECHINICAL BOOKS												
1.8 FEE FOR PROFIT @ 10% In-country labor	38.4	26.7	11.7		38.4	26.7	11.7		56.6	40.3	16.3	
TOTAL	441.0	306.0	135.0	0	441.0	306.0	135.0	0	653.9	463.6	190.3	0
(Equivalent RP X 10^6)	(275.6)	(191.3)	(84.4)	(0)	(275.6)	(191.3)	(84.4)	(0)	(408.7)	(289.8)	(118.9)	(0)

Sheet 3 of 4

TABLE 12.9
ESTIMATED CONSULTANT COSTS
(IN $ 1,000 US DOLLARS AND 1,000,000 RP @ 625/$)

	JAMBI				CENTRAL SULAWESI				WEST NUSA TENGGARA			
	Total	I	II	III	Total	I	II	III	Total	I	II	III
2. RUPIAH COSTS (in 10^6 x Rp)												
2.1. LABOR INDONESIAN CONSULTANTS, PLUS ADMIN SPT (LABOR AND FEE) AND FEE	113.7	68.2	39.8	5.7	106.4	63.8	37.2	5.4	136.0	81.6	47.6	6.8
2.2 SUPPORT												
2.2.1. Offices furn, equipt. vehicles, repro, communication, in-country travel, local employees, out-of-station allows, etc	121.0	91.0	17.6	12.4	108.4	81.4	15.8	11.2	159.2	120.2	23.0	16.0
2.2.2. Expatriate housing allows assume $ 50 (Rp 31,250) per-day in provinces & $ 66 (Rp 41,250) /day in Jakerta	56.3	39.1	17.2		56.3	39.1	17.2		82.9	59.1	23.8	
SPT SUBTOTAL	177.3	130.1	34.8	12.4	164.7	120.5	33.0	11.2	242.1	179.3	46.8	16.0
T O T A L	291.0	198.3	74.6	18.1	271.1	184.3	70.2	16.6	378.1	260.9	94.4	22.8
3. COMBINED COSTS												
3.1. FOREIGN CURRENCY IN RUPIAH X 10^6	275.7	191.3	84.4	0	275.6	191.3	84.4	0	408.7	289.8	118.9	0
3.2 RUPIAH COSTS (RP X 10^6)	291.0	198.3	74.6	18.1	271.1	184.3	70.2	16.6	378.1	260.9	94.4	22.8
GRAND TOTAL (RP X 10^6)	566.7	389.6	159.0	18.1	546.7	375.6	154.6	16.6	786.8	550.7	213.3	22.3
EQUIV. U.S. DOLLARS ($ X 10^3)	906.7	623.3	255.4	29.0	874.8	601.0	247.3	26.5	1258.9	881.1	341.3	36.5

Sheet 4 of 4

TABLE 12.10

COST ESTIMATE OF ASSOCIATE CONSULTANT

LABOR AND SUPPORT COSTS

Unit prices and assumptions used in estimating associate consultant labor and support costs are as follows :

1. Fixed Direct Costs (Labor Costs)

   Billing Rates used are 1980/1981 Bina Marga Billing Rates for local consultants (1979/1980 Billing Rates + 10% escalation).

2. Fixed Other Direct Costs

   Calculations were made based on usual procedures used by Bina Marga.

3. Reimbursable Direct Costs

   a. All unit prices used are based on costs experienced on the Study Program for Feeder Road Management I.

   b. Total vehicles required are estimated to be :

      - 25 Vehicles in the Districts (1 vehicles for each District Representative)
      - 8 Vehicles at Province Capitals (2 vehicles for each Province Capital).
      - 4 Vehicles at Jakarta Office.

      Vehicles for Districts and Provinces are 4 wheel-drive, Jeeps. Vehicles for Jakarta Office are Sedans.

TABLE 12.10.

COST ESTIMATE OF ASSOCIATE CONSULTANT LABOR AND SUPPORT COSTS

TOTAL COSTS

COST ITEMS	YEAR	TOTAL (RP)	JAKARTA OFFICE (RP)	4 PROVINCE OFFICES (RP)
1. LABOR COST	1	393,468,000	98,367,000	295,101,000
	2	229,523,000	57,381,000	172,142,000
	3	32,789,000	8,197,000	24,592,000
2. FIXED OTHER DIRECT COST	1	66,317,000	19,895,000	46,422,000
	2	17,856,000	5,357,000	12,499,000
	3	17,856,000	5,357,000	12,499,000
3. REIMBURSABLE COST	1	488,383,000	122,096,000	366,287,000
	2	88,797,000	22,199,000	66,598,000
	3	57,084,000	14,271,000	42,813,000
TOTAL	1	948,168,000	240,358,000	707,810,000
	2	336,176,000	84,937,000	251,239,000
	3	107,729,000	27,825,000	79,904,000
GRAND TOTAL		1,392,073,000	353,120,000	1,038,953,000

Sheet 2 of 6

TABLE 12.10.

COST ESTIMATE OF ASSOCIATE CONSULTANT

LABOR AND SUPPORT COSTS

PROVINCE : ACEH

COST ITEMS	YEAR	R U P I A H
LABOR COST	1	81,587,000
	2	47,593,000
	3	6,799,000
FIXED OTHER DIRECT COST	1	12,396,000
	2	3,337,000
	3	3,337,000
REIMBURSABLE COST	1	107,750,000
	2	19,591,000
	3	12,594,000
T O T A L	1	201,732,000
	2	70,520,000
	3	22,730,000
GRAND TOTAL		294,982,000

Sheet 3 of 6

TABLE 12.10

COST ESTIMATE OF ASSOCIATE CONSULTANT

LABOR AND SUPPORT COSTS

PROVINCE : JAMBI

COST ITEMS	YEAR	R U P I A H
LABOR COST	1	68,195,000
	2	39,781,000
	3	5,683,000
FIXED OTHER DIRECT COST	1	11,041,000
	2	2,973,000
	3	2,973,000
REIMBURSABLE COST	1	80,016,000
	2	14,549,000
	3	9,353,000
T O T A L	1	159,252,000
	2	57,302,000
	3	18,008,000
GRAND TOTAL		234,562,000

Sheet 4 of 6

TABLE 12.10

COST ESTIMATE OF ASSOCIATE CONSULTANT

LABOR AND SUPPORT COSTS

PROVINCE : C. SULAWESI

COST ITEMS	YEAR	R U P I A H
LABOR COST	1	63,731,000
	2	37,177,000
	3	5,311,000
FIXED OTHER DIRECT COST	1	10,590,000
	2	2,851,000
	3	2,851,000
REIMBURSABLE COST	1	70,772,000
	2	12,868,000
	3	8,272,000
T O T A L	1	145,092,000
	2	52,896,000
	3	16,434,000
GRAND TOTAL		214 422,000

Sheet 5 of 6

TABLE 12.10.

COST ESTIMATE OF ASSOCIATE CONSULTANT

LABOR AND SUPPORT COSTS

PROVINCE : WEST N. TENGGARA

COST ITEMS	YEAR	R U P I A H
LABOR COST	1	81,587,000
	2	47,593,000
	3	6,799,000
FIXED OTHER DIRECT COST	1	12,396,000
	2	3,337,000
	3	3,337,000
REIMBURSABLE COST	1	107,750,000
	2	19,591,000
	3	12,594,000
T O T A L	1	201,732,000
	2	70,520,000
	3	22,730,000
GRAND TOTAL		294,982,000

Sheet 6 of 6

SECTION 13
CONSULTANT FOLLOW-ON SUPPORT

This Section provides an outline of recommended follow-on consultant support for the three year* feeder roads program. Section 9 should be consulted also for the phasing and scheduling of consultant support with other elements of the recommended program.

Recommended consultant support consists of the following four elements :

(1) An outline of a scope of work for the follow-on consultant (paragraph 13.1).

(2) A recommended consultant organization (paragraph 13.2).

(3) Proposed schedules of major consultant activities and staffing (paragraph 13.3).

(4) A list of recommended consultant staff position qualifications in education and experience (paragraph 13.4).

13.1 OUTLINE OF CONSULTANT SCOPE OF WORK

This scope of work outline is designed to serve for consultant support to the GOI in executing a three year* feeder road** improvement program in the Provinces of Aceh, Jambi, Central Sulawesi and West Nusa Tenggara. Objectives of the program are to improve the capability of the selected Provincial and subordinate District organizations, as supported by local contracting and consulting organizations to successfully plan, design, construct and maintain a feeder roads network. The program will be specifically targeted to accomplish the following tasks*** :

(1) Development of methodology for establishing the long term rural transport requirements of the Provinces/Districts based on existing demand and expected general economic growth in accordance with regional development plans ;

(2) Development of a system to select rural roads for improvement and establishment priorities, and integration of such improvements with rural development programs/activities ;

---

* At the direction of the GOI Study Program Steering Committee, recommendations have been prepared to extend the program to five years. However, recommended consultant support encompasses only the first three years of the extended five year program.

** For the purpose of this scope of work, "feeder roads" are low volume rural roads which are further defined (i.e., are synonymous with) "District" (Kabupaten) roads. Reference : Request for Proposal for Study Program for Feeder Roads Management I, Ministry of Public Works, Directorate General of Highways, July1978. Thus, the terms "feeder roads" and "District roads" are considered equivalent and are used interchangeably in this scope of work.

*** Ref : Terms of Reference IBID.

(3) Analysis of selected Provincial Public Works and District Public Works Departments including formulation and execution of action programs to overcome identified weaknesses ;

(4) Review of manpower training requirements and preparation and implementation of detailed training programs in planning, design, construction and maintenance of feeder roads.

(5) Formulation of a management system for control of construction and maintenance programs ;

(6) Development of the local road consulting and construction industry ;

(7) Research and experimentation in the use of materials, techniques of construction, economical designs, etc. ;

(8) Development of planning procedures, standard designs and specifications, and construction/maintenance operations manuals ; and

(9) Provision of appropriate plant, equipment and materials in support of basically labor intensive construction. It should be noted that the degree of labor intensive construction recommended will depend to a large degree on the availability of local labor.

13.1.1 CONSULTANT WORK PROGRAM

The consultant's work program consists of technical assistance to the GOI to attain the objectives set forth in paragraph 13.1, specifically through assisting in the implementation of the recommendations and programs set forth in Sections 10, 11 and 12 of this report. Summarized major consultant tasks are :

(1) Management assistance to improve the organizational structure and management of feeder road funding, planning and implementation; in particular assistance In the establishment of priorities and selection of District roads for develop - ment.

(2) Expert assistance in Regional and District development and transportation planning.

(3) Expert assistance in defining and implementing technical standards (design and construction) for feeder roads and bridges including the utilization of locally available materials, new construction techniques and materials, testing laboratories and other quality control/quality assurance techniques.

(4) Expert assistance in establishing a planned maintenance program for feeder roads and bridges for execution primarily by government forces.

(5) Expert assistance in the selection, planning, design, construction and equipping of new Provincial workshops and the rehabilitation of existing workshops.. Provide equipment maintenance management advisors in each the Provinces and advisory services as required to the Regional workshops.

(6) Expert assistance in each Provincial and District Public Works Department to assist in the technical engineering analysis to determine types and quantities of equipment required for the various District roads projects to assist DPUP procurement in obtaining equipment and related repair parts.

(7) Expert assistance in the design and execution of training programs to upgrade the capability of Provincial and District staffs to plan, design, construct and maintain feeder roads and bridges with emphasis in the areas noted in (1) through (6) above. Areas of participation for personnel of private contractors and consultants will be identified and means of encouraging their participation identified.

(8) Management assistance encompassing all the foregoing to provide the means of effective technology transfer in the form of procedures, manuals and a continuing program for in-service and on-the-job training.

While the above summarized tasks are all important to the feeder road program, the two major efforts of the consultant are expected to be the preparation and execution of training programs and assistance in expanding and upgrading equipment maintenance facilities.

In order to accomplish the work program the consultant will necessarily contact, coordinate with and assist a number of organizations at the various levels of government. To do this, the consultant will be expected to establish a main or central office in Jakarta within reasonable proximity of the Directorate General of Highways. The consultant will also be expected to establish a field office in each of the four Provincial capitals, Provincial workshops and training sites. The organizations with which the consultant is expected to assist and/or otherwise interface with are as follows (with those organizations with which most consultant assistance/ interface activities are expected marked with a "(P)").

(1) <u>Central Government</u>

(a) Department of Public Works
- o Directorate General of Highways
- o Directorate of Planning
- o Sub Directorate of Rural Roads (P)
- o Sub Directorate of Engineering and Design
- o Sub Directorate of Planning
- o Education and Training Center (P)
- o Directorate General of Cipta Karya

(b) Department of Home Affairs

(c) Department of Manpower and Transmigration

(d) Bappenas

(e) Proposed feeder roads Central Training Facility (to be established as part of the training program) (P)

(2) Regional

(a) Regional workshop supporting the selected Provinces (P)

(b) Road Betterment Offices

(c) Regional Training Centers (P)

(d) Other Regional Offices as required

(3) Province

(a) Secretariat/Development Bureau

(b) Department of Public Works
- o Highway Division (P)
- o Equipment Workshops (P)

(c) Bappeda (P)

(d) Provincial Training sites (to be established as part of the training programs) (P)

(e) Other Provincial government offices and Provincial offices of Central Government organizations as required

(f) Local contractors and consultants

(g) Other organizations and agencies as required

(4) District

(a) Secretariat/Sub–Development Bureau

(b) Department of Public Works
- o Road Division (P)
- o Equipment Division (P)

(c) Bappeka (P)

(d) Sectoral Provincial Offices as required

(e) Other District Offices

(f) Local contractors and consultants

(g) Sub district organizations as required (such as Sub–Districts and Villages)

(h) Other organizations as required

(5) Other

(a) Consultants and contractors involved in rural roads programs

(b) Other organizations as required.

13.1.2 SPECIFIC CONSULTANT TASKS

Specific consultant tasks must be tailored to accomplish the previously summarized required assistance to Regional, Provincial and District (and in some cases, Sub–District) levels of government, with special emphasis on equipment maintenance and training. These two areas cut across levels of government. Thus the organization of this subsection is :

(1) Overall consultant tasks to support the GOI at the Central Government level in organization, institutional relationships, planning, project and program development, and funding (paragraph A that follows).

(2) Specific consultant tasks related to the principal consultant interface with the Central Government, i.e., with the proposed Sub–Directorate of Rural Roads (paragraph B that follows).

(3) Specific consultant tasks associated with assistance to the planning and engineering/technical organizations implementation of the three year feeder roads program at Provincial and District levels (paragraph C through F that follow).

(4) Equipment maintenance facilities and operations (paragraph G that follows).

(5) Training Programs (paragraph H that follows).

(6) Assistance to the Private Sector (paragraph I that follows).

A. Assistance to Central Government Organizations

Provide expert assistance to the Central Government organizations and agencies involved in institutional organizations/relationships, planning, programming, and funding for District roads and bridges, through coordination with the proposed Sub–Directorate of Rural Roads*. Organizations to which this assistance/coordination is expected to include are various elements of the Departments of Public Works, Home Affairs, and Manpower and Transmigration, and Bappenas. Specific areas of assistance (pertaining to District/feeder roads) are as follows :

1. Develop specific, written definition of relationships, and assign specific responsibilities

* See paragraph B following for specific consultant support requirements specifically tied to the responsibilities of the Sub-Directorate of Rural Roads.

and lines of authority between :

(1) Bappenas – Bappeda

(2) Bappeda – Provincial Development Bureau

(3) Bappeda – Bappeka

(4) Bappeka – District Development Bureau.

2. Develop/refine written procedures to formalize the relationships between Cipta Karya, PTPT, and BIPRAN in the Department of Public Works ; and the Departments of Home Affairs, Manpower and Transmigration and Bappenas in District road planning and programming, and funding.

3. Perform a study to determine the feasibility and means of speeding up the funding process for District road and bridge projects so as to reduce or eliminate the problem of "late funding" which pushes the execution of projects into the rainy season.

4. Investigate the means of :

(1) Providing funding for at least 50% of improvement and maintenance projects at the beginning of the fiscal year.

(2) Setting up an "Inpres Emergency" funding procedure to provide funding for repair, rehabilitation and reconstruction caused by natural disasters.

B. Assistance to the Sub-Directorate of Rural Roads

Provide expert assistance to the proposed Sub–Directorate of Rural Roads, Directorate of Planning, Directorate General of Highways in the following areas as they relate to feeder/ District roads :

1. Refinement as required, of the proposed Sub–Directorate's organization, staffing and responsibilities.

2. Development of methodology and execution of long range planning, including :

(1) Planning methods and techniques, including screening and selection of District roads for development.

(2) Research.

(3) Feasibility studies.

3. Development of standard data collection and processing including :

(1) Road and bridge inventory methods and procedures.

(2) Traffic counts and projection techniques.

(3) Data base format and technique.

4. Development of technical/engineering standards for use by District and Provincial agencies including :

(1) Feeder road, bridge and drainage design standards; design and construction options including stage construction and the use of new techniques such as the use of precast/prestressed concrete bridge elements and soil stabilization methods.

(2) Field survey methods and procedures.

(3) Standard plan and specification format and content.

(4) Feeder road and bridge maintenance standards.

(5) Standard construction methods, inspection and supervision.

(6) Standard contractor prequalification requirements and procedures (with increased emphasis on equipment maintenance capabilities and where applicable, for new type construction techniques, such as precast bridge construction), contract documents, tender documents and procedures.

(7) Standardization and systemization of technical support to Provincial and District agencies.

5. Development of programming methods and techniques including program development and evaluation of resources.

6. Development of manuals promulgating activites 2 through 5 above.

7. Development of systematic coordination with other Central Government agencies as well as Provincial and District agencies (including routine field visits) on activities 1 through 6 above, regarding feeder road activities of the Sub–Directorate.

8. Development of a system of reports appropriate to activities 1 through 7 above.

C. <u>Assistance to Provincial Planning Boards (Bappeda)</u>

Provide expert assistance to each Bappeda in the following areas relating to District roads :

1. Development of methodology and the execution of improved planning for District roads (construction, upgrade, rehabilitation and maintenance) to include annual, five year and long range plans and programs. This includes development of a system of establishing priorities and selection of District roads for improvement, integrated with rural development programs. This further includes development of methods and systems of obtaining and coordinating necessary road and bridge data and other technical input, in standardized format, on a scheduled basis, from the Sub–Directorate of Rural Roads, Provincial and District Public Works Departments and District Planning Boards (Bappekas), as well as defining interfaces between

the various District and Provincial organizations involved.

2. Development of appropriate in-house methodology and capability to perform economic feasibility studies, and to provide economic, social and cultural inputs into the District road planning process. This includes providing guidance and direction to the Provincial Highway Division and District Planning Boards of the content and format of input required from them.

3. Development of a system for providing statistical and growth trend inputs into the planning process, and the maintenance of a data base of District Road program implementation. This includes providing guidance and direction to the Provincial Highway Division and District Planning Boards of the content and format of input required from them.

4. Development of a systematic means to insure coordination of all National, Provincial, District, Sub–District and Village programs within the Province. Included would be roadworks generated by other "nonroad" programs such as Transmigration projects.

5. Development of a system of requiring and assuring comprehensive coordination of all District road programs regardless of funding source to produce optimum economic and social benefit. Develop concurrently a program to insure an adequate percentage of funds are "earmarked" from Inpres Jalan and other funding sources to insure newly constructed roads are included (and adequately funded) in the regularly scheduled road maintenance program.

6. Development of a system of reports appropriate to the above activities.

7. Development of procedures and manuals to implement the above activities.

8. Performance of a study to determine how the District road program approval/funding cycle can be streamlined at Province/District level so that the current cycle might be shortened in order to reduce the effect of late approval/funding pushing road projects into the rainy season.

9. In Jambi and Aceh Provinces perform a study (headed by Bappeda, and assisted by the Provincial and District Public Works Departments and the District Planning Boards) to determine the feasibility and the resources required (money, manpower and equipment) to accelerate the rehabilitation of District roads and bridges to bring these programs in these two Provinces to within an acceptable time frame.

D. Assistance to Provincial Public Works Department Highway Division

Provide expert assistance to Provincial Public Works Department Highway Division as follows:

1. Refinement of organizational and staff responsibilities to successfully coordinate the Divisions' District road responsibilities and activities with other activities and responsibilities (e.g., Provincial and National roads and bridges).

2. Assist Bappeda in the development of a system of coordinating and defining interfaces between the Sub–Directorate for Rural Roads, Bappeda, District Highway Departments, Bappeka and other Provincial and District agencies involved in the technical planning and execution of District road programs.

3. Utilizing technical standards, designs, forms and procedures developed by the Sub–Directorate of Rural Roads, develop a formal system for assisting Districts with the development of road and bridge inventory systems; compilation of a data bank of District road and bridge inventories; and production and maintenance of alignment and condition maps of District roads and bridges.

4. Development of a system to assist the Districts in collecting, compiling, recording and reporting data for route surveys, soils classification surveys, and borrow, quarry and other materials sources surveys.

5. Development of systems for the dissemination to Districts of road and bridge standards, designs, procedures, contract preparation, construction methods, and other technical information.

6. Development of a formal system for required review of all District road and bridge project proposals, designs, plans and specifications, and contract documents.

7. Development of a program for increased assistance to Districts for design support, particularly of longer span bridges.

8. Development of a program for routine support to Districts in soils, concrete and other materials testing; as well as other quality assurance/quality control techniques.

9. Development of a program for assisting Districts with determination of needs and development of programs for road and bridge maintenance; setting up a system of records of District maintenance programs and expenditures; and assisting Districts in determining shortfalls in maintenance needs, investigating causes and recommending solutions.

10. Development of a system of routine, scheduled field visits to District Road Division offices and District road and bridge project sites and holding regular District/Provincial technical staff meetings to provide : follow-up checks to assure that the above listed items are being satisfactorily accomplished, a forum for on-the-spot identification of problems, and additional technical assistance.

11. Development of a system of reports appropriate to the above activities.

12. Development of written procedures to implement the above activities.

E. Assistance to District Planning Boards

Provide expert assistance to District Planning Boards (Bappeka), in the following areas relating to roads and bridges :

1. Refinement as required of the proposed organization, staffing and responsibilities of Bappeka as they apply to or affect District road and bridge programs.

2. Development of methodology for and the execution of collecting land use, social and economic data and statistics, and preparing it in the form dictated by Bappeda for Bappeda's (as well as District's) use in District road and bridge planning. Included is the development of standard tables and maps of land use, social and economic data and statistics.

3. Development of the capability and following this the assumption of responsibility for taking the lead in preparation and submittal of draft District road and bridge programs and project proposals (DURP's) to Bappeda. This includes the responsibility for coordination with other District organizations and District based National and Provincial offices as required.

4. In coordination with and under the overall direction of Bappeda, develop a system for performing a systematic review of Sub—District and Village road and bridge needs and provide recommended coordination and integration of those projects accomplished at Sub—District and Village levels (e.g., those funded through Padat Karya and Inpres III), with District road and bridge programs. Also included is the requirement to submit these reviewed/integrated program recommendations to Bappeda in the format dictated by that board.

5. Development of a program of advice and assistance available on request to Sub—District and Villages.

6. Development in coordination with and under the direction of Bappeda, of reports appropriate to the above activities.

7. Development in coordination with and under the direction of Bappeda, of procedures to implement the above activities.

F. Assistance to District Public Works Roads Divisions

Provide expert assistance to District Public Works Roads Divisions as follows :

1. Reorganization of the Road Division combining it with the Provincial Sectoral Roads Division element*, (if the recommendation to combine the District Public Works Department and the Provincial Public Works Sectoral Offices is approved by the GOI). Included would be a refinement of organizational and staff responsibilities and relationships to successfully

---

* Of the four selected provinces, West Nusa Tenggara currently has a combined District Public Works/ Provincial Sectoral Public Works organization.

coordinate the activities of the combined organization to support District as well as assigned Provincial and National road and bridge projects* .

2. Development of the capability to plan and conduct, followed by the execution of road alignment and cross-section surveys, routinely updated road and bridge inventories, annual traffic surveys, soils surveys, and quarry, borrow and other materials source surveys and inventories.

3. Utilizing the guidance; technical standards; standard designs, plans and specifications; and other technical directives provided by the Sub–Directorate of Rural Roads and the Provincial Roads Division; develop the capability and then execute an expanded program of road and bridge projects including :

(1) Preparation of plans and specifications.

(2) Preparation of contract and tender documents (for projects to be accomplished by contract).

(4) Supervision of in-house/force account performed work.

(5) Provision of quality control for both contractor and government performed work.

(6) Setting up and maintaining standard plans, files and records.

4. Development and execution of annual road and bridge maintenance programs including planning, estimating, scheduling, supervising and recording. Included is a phase-in of government force performance of this type maintenance.

5. Under the guidance and direction of the Sub - Directorate for Rural Roads, the Provincial Road Division and Bappeka, development of a system and schedule of reports with the content and format as dictated by these organizations in their respective areas of responsibility and authority.

6. Development of a system of procedures to implement the above activities.

7. Development of routine systems for identifying design, materials testing, maintenance and other technical problems beyond the capability of the District Roads Division to solve, and thereby leading to submittal of requests for assistance to the Provincial Roads Division.

8. Development of technical assistance available on request, to Sub–Districts and Villages in road and bridge design, construction and maintenance.

---

* If this combined organization is not approved, expert assistance will still be required to refine the organization and staffing of the District Roads Division so that the Division will be capable of providing effective support in the execution of the proposed three year feeder roads program.

G. Assistance in Equipment Operation and Maintenance

Provide expert assistance in equipment operation and maintenance as follows :

1. Expert assistance in the planning, design, schedulling and construction of the 15 proposed Provincial Workshops and in the necessary rehabilitation of the five existing Provincial workshops. Pursuant to these tasks, the consultant shall provide assistance in :

   (1) Preparation of a general maintenance facility layout showing the necessary maintenance and service bays, spare parts and tooling storage/retrieval areas, offices, water closets, etc. This layout shall include a listing of all maintenance equipment and special tooling/fixtures required and their relative locations within each bay.

   (2) Review of facility design drawings, standards, specifications, engineering cost estimates, bid documents (if tendered), construction schedules, and tools and equipment procurement documents.

   (3) Construction surveillance, review of shop drawings and change orders, and construction and equipment installation acceptance.

2. A maintenance management advisor for an estimated 1½ year period in each of the four Provinces and part time (via visits by the Jakarta and Province based consultant maintenance advisors) to the four supportive Regional workshops during the period of recommended phase-out of the Regional workshops support to Provincial workshops. The advisors are to provide assistance in maintenance planning; shop operations and procedures; tools; equipment and parts control; spare parts requirements, procurement and issue; and maintenance records and files. In addition to supporting the onsite shop operations, the advisors shall make periodic trips to the construction sites to check, report and advise on the adequacy of equipment utilization and maintenance, and the completeness of the daily equipment usage and maintenance forms.

3. Advice to each Provincial Department of Public Works Road Division to assist in the technical engineering analysis of road projects to determine the types and quantity of equipment required. Also provide advice in the procurement of equipment and the provisioning of spare parts.

4. Advice to the consultant training specialists and to the DPU training center to assist in the development of course material and training equipment relative to all aspects of equipment management, operations and maintenance.

H. Assistance in Training

Provide expert assistance in training as follows :

1. Using the detailed training program outlined in Section 11, (and the consultant tasks outlined therein), and the preliminary estimates associated with training contained in Section 12, develop detailed, comprehensive three year training programs for feeder roads including detailed plans, schedules, estimates, training aids, facilities requirements, instructor requirements, lesson outlines and lesson plans, and a system of training administration and records.

2. For rationale and parameters to be followed in developing the detailed training programs, see Section 11. Some of the more important elements are :

(1) Phasing of instruction including classroom to on-the-job training, utilizing a combined centralized/decentralized concept.

(2) Close collaboration with GOI counterparts from the beginning of instruction, and phasing in the counterparts so that they pick up some of the instruction load during the first and second years and essentially assume the full instructional load during the third year of the program (and then continue instruction in subsequent years as required).

(3) An analysis of who is to be trained with emphasis on training District, Workshop, and Provincial personnel associated with District roads and bridges (and equipment for same), with Central Government trainees limited to staff members of the Sub—Directorate of Rural Roads, and the training of local contractor/consultant personnel being limited to voluntary participants.

(4) Emphasis on on-the-job training to the maximum practical extent, and using the team concept (engineers, supervisors, surveyors, etc.) in on—the—job execution of practical work on actual "pilot projects" of road and bridge construction and maintenance within Districts of the respective Provinces.

(5) Short (a few days to a week) refresher/"check-up" training courses in the various disciplines : particularly equipment operations and maintenance and other non-professional technical disciplines such as surveying and quality control to be held approximately three months after completion of initial training and annually thereafter.

3. Upon approval by the GOI of the detailed training programs and schedules, conduct the training.

I. Assistance to Private Sector

In consonance with the GOI's desire to promote improved capability of local consultants and contractors to participate in feeder road programs, provide expert assistance to private consultants and contractors as follows :

1. Local Consultants

In collaboration with the Sub–Directorate of Rural Roads, Provincial agencies (Bappeda and Public Works/Highway Divisions), and District agencies (Bappeka and Public Works/Road Division); encourage and assist the development of local consultants to plan and design District road and bridge projects. Since the local consultants are very weak in this capability in the four Provincies, development of these consultants should only be considered along the following lines :

(1) During the three year program, local consultant support will be negligible.

(2) Consider using selected consultants on a few, carefully selected, relatively small projects initially.

(3) Provide GOI/Consultant on-the-spot assistance and review of local consultant designs, plans, and specifications at early stages, e.g., at 10%, 50% and 90% design rather than waiting for review only when designs are 100% complete.

(4) Encourage private consultant firms who have participated in National and Provincial Road projects to expand their operations to District Roads. This would include, where necessary, Java based firms.

(5) Encourage local firms to join with Java based firms in joint venture design efforts so as to enhance their performance and improve their capabilities. Consider "set aside" contracts for local firms, permitting them to qualify for consultant work as part of a joint venture with larger, better qualified Java based firms.

(6) Invite local consultants to participate in the on-the-job training, particularly in the "pilot-project" practical road and bridge training.

2. Local Contractors

In collaboration with the Sub–Directorate of Rural Roads, Provincial Agencies (Bappeda and Public Works/Highways Divisions), and District Agencies (Bappeka and Public Works/Road Divisions); encourage and assist the development of local contractors to execute District road and bridge construction, upgrade and rehabilitation projects.

(1) Particular emphasis should be given to encouraging developing independent contractor equipment capabilities (i.e., phasing out use of government equipment by contractors). Consider establishing an incentive program to reward contractors using their own equipment.

(2) Development of equipment maintenance capabilities of contractors as a factor in prequalification standards.

(3) Encourage joint ventures of local contractors with other (e.g., Java based) contractors for more sophisticated or "new" type of construction such as prestressed concrete bridges, soil stabilization, and double surface treatment paving.

(4) Invite contractors to participate in "pilot-project" training.

13.2. PROPOSED CONSULTANT ORGANIZATION

The proposed consultant organization and main interfaces with GOI organizations is shown on Figure 13.1. As indicated on the figure the consultant organization is to be staffed by a combination of expatriate and local associate Indonesian personnel.

13.3. CONSULTANT SUPPORT SCHEDULES

A summary of estimated consultant support by major activity is shown on Figure 13.2. The rationale is :

(1) Institutional support will be concentrated within approximately the first year, which will encompass essentially one year's planning/budgeting/funding cycle.

(2) Engineering/technical support will be concentrated within the first year at the Central Government level (development of standards, systems, etc.) and extended to a year and one-half in the Provinces and Districts to allow time for implementation of these standards, systems, etc., in the field.

(3) Maintenance support begins early in the first year and continues into the third year.

(4) Training involves :

(a) Development of detailed programs, lesson plans, etc. during the first 6 months.

(b) Instructor Training begins in the second month, followed by regular training courses beginning at the end of the third month. Most training will be conducted by consultant staff in the first year, with consultant conducted training peaking in the second year and phasing out early in the third year.

(c) GOI instructors begin conducting some limited training in the first year, increasing their role in the second year, and conduct most training given in the third year (and all training in subsequent years).

A schedule for consultant staffing to support this proposed program in shown Figure 13.3 with estimated expatriate and local associate consultant man months of 443 and 829 respectively.

13.4. RECOMMENDED CONSULTANT QUALIFICATIONS

The following recommended consultant qualifications are for expatriate and local consultants (Indonesian Associates).

13.4.1. EXPATRIATES

Although not an absolute requirement, it is highly desirable that each expatriate has spent some time in an overseas assignment; particularly in a developing country or rural area. Since all positions will require field service in some locations with relatively austere facilities and somewhat harsh environments, good health and physical condition are essential.

A. Project Manager

1. Education : Bachelor of Science in Engineering; Civil, or Highway preferred. Additional university or equivalent training in management desirable.

2. Experience : Minimum of fifteen years in managing design and large construction projects including roads and bridgeworks. Should have registration as a professional engineer or recognized equivalent.

B. Chief Planner (Transportation Planner)

1. Education : Bachelor of Science degree or equivalent in Civil, Transportation or Highway Engineering, or Bachelor of Science/Bachelor of Arts in Economics, Systems Analysis or Planning.

2. Experience : Minimum five years in planning assignment, three of which should be in transportation planning including roads.

C. Programmer

1. Education : Bachelor of Science or Bachelor of Arts in Engineering, Statistics, Accounting or Finance.

2. Experience : Minimum of five years in programming for government or large civilian projects.

D. Finance/Budget Specialist

1. Education : Bachelor of Science or Bachelor of Arts in Economic, Business Administration : Accounting, Finance or Budgeting.

2. Experience : Minimum of five years experience in government or large scale private programs.

E. Social Economist

1. Education : Bachelor of Science or Bachelor of Arts with major study in Social Economics.

2. Experience : Five years in assessing and/or planning development projects involving considerations of social, economic, and cultural benefits.

F. Chief Engineer (Roads/Drainage)

1. Education : Bachelor of Science in Civil or Highway Engineering.

2. Experience : A minimum of ten years encompassing management and execution of both engineering design and construction or rural roads and drainage structure systems.

G. Bridge/Structural Engineer

1. Education : Bachelor of Science in Structural or Civil Engineering.

2. Experience : A minimum of five years planning, designing and estimating costs for timber, steel and concrete bridges and large culverts. Experience should include maintenance and repair analysis/design of existing bridges.

H. Foundations and Materials Specialist

1. Education : Bachelor of Science in Engineering; Civil, Materials or Soils prefered.

2. Experience : A minimum of five years experience including foundations and soils investigations and design, and experience in the management and execution of materials testing programs including soils, aggregates, portland cement concrete, and asphalt paving materials.

I. Chief Equipment Maintenance Specialist

1. Education : Bachelor of Science in Engineering; preferably Mechanical or Civil; or Bachelor of Arts/Science in Management.

2. Experience : Ten years in equipment maintenance and operations including road equipment maintenance and operations including developing and implementing large scale maintenance management programs.

J. Provincial Workshop Representative (Equipment Maintenance Specialist)

1. Education : High School graduate. Desirable to have completed academic, private industry or government courses in diesel and gasoline engine equipment operations, maintenance and repair; workshop management; and/or spare parts supply and management.

2. Experience : Ten years in supervision of road equipment maintenance, , repair and operation; experience in workshop management.

K. Provincial Resident Representative

1. Education : Bachelor of Science in Civil or Highway Engineering.

2. Experience : Ten years in managing and executing road, drainage, and supporting facilities design, construction and maintenance programs; including low volume traffic roadworks.

L. Transportation Economist

1. Education : Bachelor of Science/Arts in Economics, Transportation Engineering (with economic minor) or related field.

2. Experience : Five years in benefit-cost and cost-effective analyses, including road/transportation systems, involving construction, upgrade and/or maintenance programs.

M. Chief Training Specialist

1. Education : an appropriate graduate degree in Education or Public Administration.

2. Experience : A minimum of ten years of managing the design, development and implementation of management training and development programs. Substantial experience as a teacher also required. Additional management experience in personnel or industrial relations desirable.

N. Instructor – Field Engineer (Course 15.11.2)

1. Education : Bachelor degree in Civil Engineering.

2. Experience : A minimum of five years of directly related experience, including supervisory and management responsibility for equipment operations and maintenance on road projects. Teaching experience desirable.

O. Instructor – Management Development (Course 15.11.3)

1. Education : Masters degree in Public Administration, Government, Business Administration or related management science.

2. Experience : A minimum of ten years of related experience in the design, development and implementation of management training and development courses. Teaching experience desirable.

P. Instructor — Chief of Machine Shop Training (Course 15.11.4)

1. Education : High School graduate (required), with additional technical/trade school education desirable.

2. Experience : A minimum of ten years of successful experience as a journeyman shop machinist with five or more years of additional experience as a shop foreman or section supervisor desirable.

Q. Instructor — Warehouse Parts Management (Course 15.11.5)

1. Education : High School graduate (required) with additional business education desirable.

2. Experience : A minimum of five years of successful experience in warehouse organization, systems and procedures with three or more years of additional experience as a foreman or supervisor desirable.

R. Instructor — Chief Mechanic and Master Mechanic (Courses 15.11.7 and 15.11.8)

1. Education : High School graduate (required) with additional trade/technical school training desirable.

2. Experience : A minimum of ten years of successful experience as a journeyman or master mechanic in a heavy equipment repair facility on diesel and gasoline engine systems with three or more years of additional experience as a shop foreman or supervisor desirable.

S. Instructor — Chief Electrician (Course 15.11.10)

1. Education : High School graduate with additional trade/technical school training desirable.

2. Experience : A minimum of ten years of successful work experience as a journeyman electrician in a heavy equipment repair facility on electrical systems with three or more years of additional experience as a shop foreman or supervisor desirable.

T. Instructor — Engineering Design (Course 15.11.15)

1. Education : Bachelor degree in Civil or Structural Engineering.

2. Experience : A minimum of five years of directly related experience on design of rural roads and bridges. Teaching experience desirable.

U. Instructor -- Transportation Planning Management (Course 15.11.6)

1. Education : Bachelors degree required, desirable is a post graduate degree in Regional Planning or related science.

2. Experience : A minimum of five years of directly related experience in transportation planning management including rural roads.

13.4.2 LOCAL ASSOCIATE CONSULTANTS

Each Indonesian Associate consultant staff member should have a working knowledge of written and spoken everyday and technical English including the ability to translate from English to Indonesian written instructions, procedures and lesson plans.

A. Deputy Project Manager

1. Education : An Ir. degree in Civil Engineering or Planning.

2. Experience : A minimum of eight years of experience in road study, design or supervision projects, including experience in supervising or directing more than 25 personnel. Experience or close aquaintance with the Directorate General of Highways and its subordinate units, and familiarity with Provincial and District road and planning groups, organizations and procedures.

B. Traffic Planner (Central Office)

1. Education : An Ir. degree in Civil Engineering or Planning.

2. Experience : A minimum of three years experience in traffic analysis, and general background or knowledge in traffic engineering and planning.

C. Field Engineer (Roads)

1. Education : An Ir. degree in Civil Engineering.

2. Experience : A minimum of three years of experience in road design or supervision projects. Familiar with various design criteria and standards as well as design methods and procedures.

D. Field Engineer (Bridges)

1. Education : An Ir. Degree in Civil Engineering.

2. Experience : A minimum of three years of experience as a bridge design engineer in road design projects; familiarity with various bridge design criteria and standards, design methods and procedures, and with various types of bridges and large culverts.

E. Field E..gineer (Transportation)

1. Education : An Ir. degree in Planning.

2. Experience : A minimum of three years of experience in planning projects, including familiarity with various techniques in data collection, analysis and interpretation, and reporting. Some of this experience should be with rural, low traffic volume roads.

F. Road/Bridge Maintenance Engineer

1. Education : An. Ir. degree in Civil Engineering.

2. Experience : A minimum of three years of experience in road and bridge construction projects, including the use of heavy equipment (especially for road maintenance), and maintenance methods and procedures.

G. Resident Representative (Civil/Highway Engineer)

1. Education : An Ir. degree in Civil Engineering.

2. Experience : A minimum of three years of experience in road design or supervision of projects; experience in conducting road and bridge inventory surveys; familiarity with various design criteria, standards, methods and procedures, and construction techniques.

H. Training Specialist

1. Education : An Ir. degree in Civil Engineering plus courses in training; a university degree from FKIT – IKIP (Faculty of Teaching in Engineering – Institute of Teaching and Paedagogic).

1. Experience : A minimum of five years of experience in training or teaching in Engineering science, experienced in curriculum development, sylabus, and teaching and training techniques, and in the use of training aids.

I. Instructor – Field Engineering (Course 15.11.2)

1. Education : An Ir. degree in Civil Engineering.

2. Experience : A minimum of three years of directly related experience including supervisory and management responsibility for equipment operations and maintenance on road projects. Teaching experience desirable.

J. Instructor – Management Development (Course 15.11.3)

1. Education : Masters degree or equivalent in public administration, government, business administration or related management science.

2. Experience : A minimum of three years of related experience in the design, development and implementation of management training and development courses. Successful classroom teaching experience at the adult level is desirable.

K. Instructor -- Chief of Machine Shop Training (Course 15.11.4)

1. Education : Technical School graduate with additional technical education desirable.

2. Experience : A minimum of five years of successful experience as a journeyman level shop machinist with one or more years of additional experience as a shop foreman or section supervisor desirable.

L. Instructor -- Warehouse Parts Management (Course 15.11.5)

1. Education : Technical school graduate.

2. Experience : A minimum of three years of successful experience in warehouse organization, systems and procedures with one or more years of additional experience as a foreman or supervisor desirable.

M. Instructor -- Chief Mechanic and Master Mechanic (Courses 15.11.7. and 15.11.8.)

1. Education : Technical school graduate (required) with additional technical training desirable.

2. Experience : A minimum of five years of successful experience as a journeyman or master mechanic in a heavy equipment repair facility on diesel and gasoline engine systems with one or more years of additional experience as a shop foreman or supervisor desirable.

N. Instructor -- Chief Electrician (Course 15.11.10)

1. Education : Technical school graduate with additional technical training desirable.

2. Experience : A minimum of five years of successful work experience as a journeyman electrician in a heavy equipment repair facility on electrical systems with one or more years of additional experience as a shop foreman or supervisor desirable.

O. Instructor -- Equipment Operations (Course 15.11.11,12,13,14)

1. Education : Technical school graduate with additional technical training desirable.

2. Experience : A minimum of three years of successful work experience as a heavy equipment operator on earthmoving, grading and paving equipment (road construction), with one or more years of additional experience as a foreman or supervisor desirable.

P. Instructor -- Engineering Design (Course 15.11.15)

1. Education : An Ir. degree in Civil or Structural Engineering.

2. Experience : A minimum of three years experience in road and bridge design. Teaching experience desirable.

Q. **Instructor—Transportation/Planning Management (Course 15.11.16)**

1. Education : Ir. degree in Transportation Planning. Post-graduate degree in regional planning desirable.

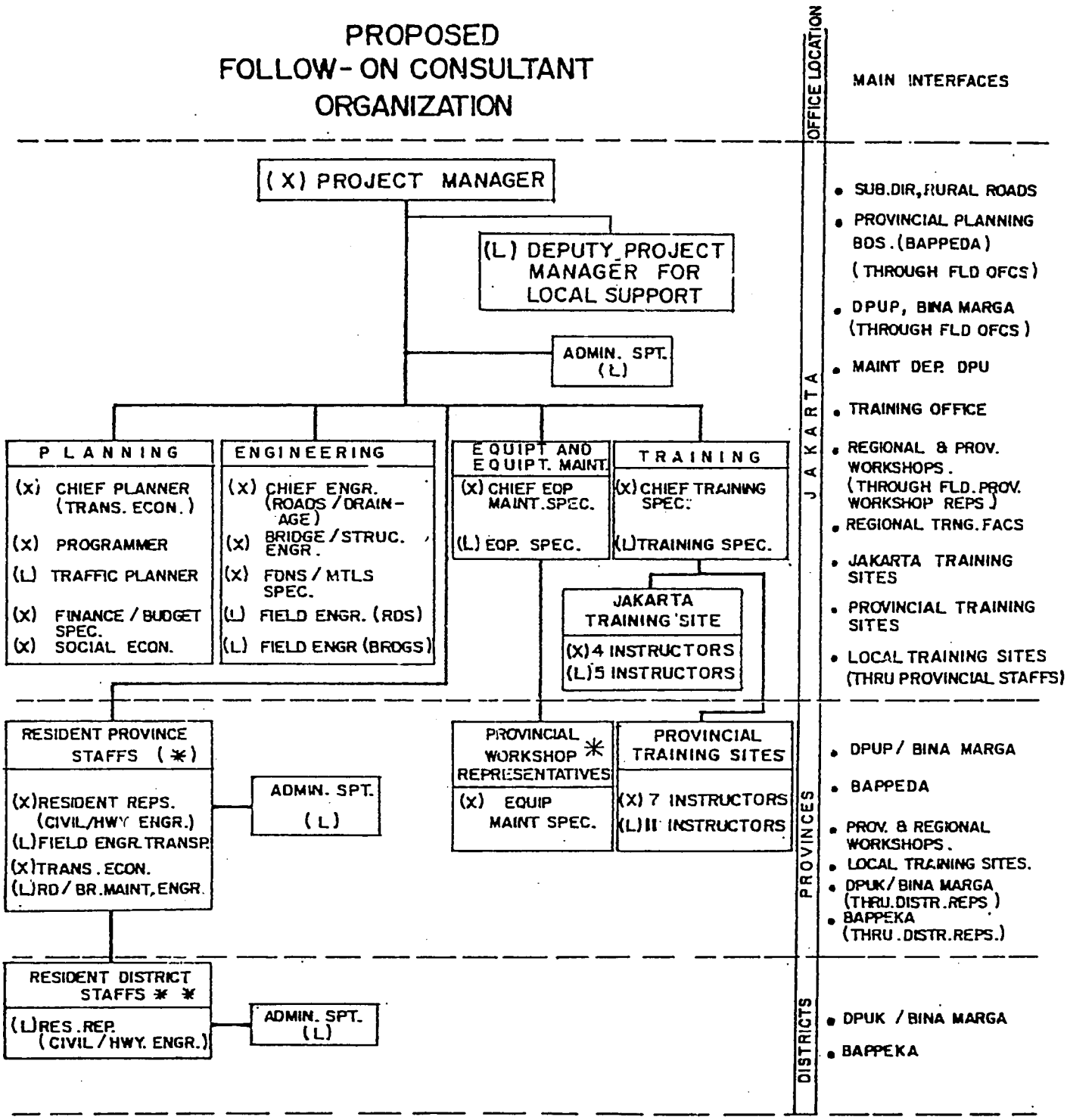
2. Experience : A minimum of three years of directly related experience including rural road planning.

R. **Instructor — Equipment Operations (Course 15.11. 11, 12, 13, 14)**

1. Education : High School graduate with additional trade/technical school training desirable.

2. Experience : A minimum of five years of successful work experience as a heavy equipment operator earthmoving, grading and paving equipment on road construction project with three more years of additional experience as a foreman or supervisor.

PROPOSED FOLLOW-ON CONSULTANT ORGANIZATION



. TOTAL CONSULTANTS .

	JAKARTA	PROVINCES	DISTRICTS	TOTAL
X = EXPAT.	14	19	—	33
L = LOCAL (Not incl. Admin. Spt.)	11	19	25	55
	25	38	25	88

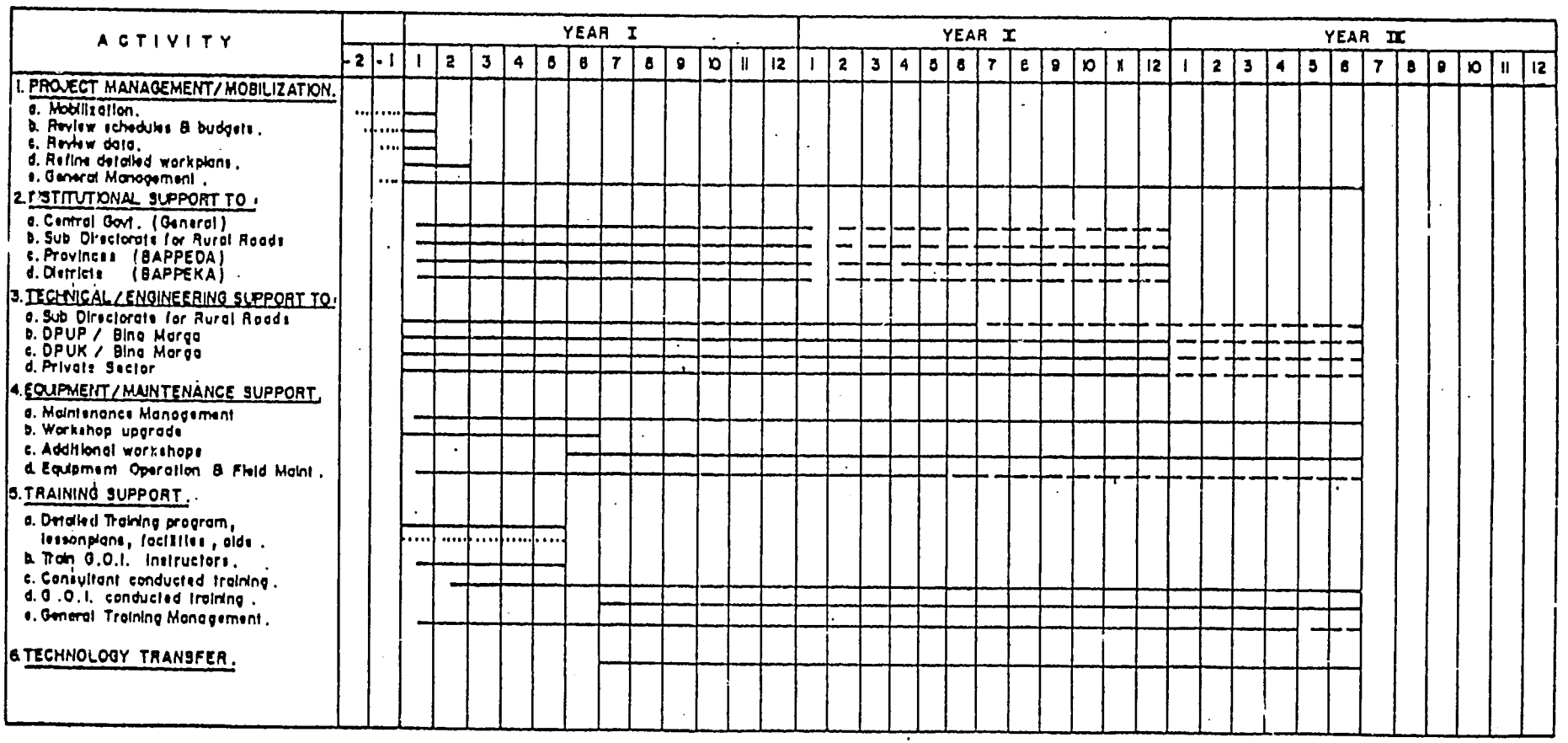
* 4 PROVINCES ; MULTIPLY. EA NO. BY 4 FOR TOTAL

** 23 DISTRICTS, 25 DPUK'S ; MULTIPLY EA REP. x 25 FOR TOTAL.

FIGURE NO. 13.1

FIGURE NO. 13.2

SUMMARY OF ESTIMATED CONSULTANT SUPPORT FOR THREE YEAR FEEDER ROADS PROGRAM



LEGEND :

..... Out of country mobilization or training development.

——— Major activity.

— — — — Continued activity as required.

FIGURE NO. 13.3

SCHEDULE OF ESTIMATED CONSULTANT FIELD STAFF REQUIREMENTS

SHEET 1 OF 5

CONSULTANT STAFF	YEAR I												YEAR II												YEAR III												MAN MONTHS	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	EXPAT.	LOCAL
PROJECT MANAGER																																					30	
DEPUTY PROJECT MANAGER																																						30
CHIEF PLANNER (TRANS. ECON.)																																					12	
PROGRAMMER	—	—	—	—	—	—	—	—																													7.5	
TRAFFIC PLANNER	—	—	—	—	—	—	—	—																														7.5
FINANCE & BUDGET SPECIALIST	—	—	—	—	—	—	—	—																													7.5	
SOCIAL ECONOMIST	—	—	—	—	—	—	—	—																													7.5	
CHIEF ENGINEER (ROADS & DRAINAGE)																																					12	
BRIDGE / STRUCTURAL ENGINEER	—	—	—	—	—	—	—	—	—	—	—	—																									11.5	
FNDS. / MTLS. SPECIALIST	—	—	—	—	—																																4.5	
FIELD ENGINEER (ROADS)																																						12
FIELD ENGINEER (BRIDGES)																																						12
																																					92.5	61.5

FIGURE NO. 13.3

SCHEDULE OF ESTIMATED CONSULTANT FIELD STAFF REQUIREMENTS

CONSULTANT STAFF	YEAR I.												YEAR II												YEAR III												MAN MONTHS	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	EXPAT.	LOCAL
CHIEF EQUIPMENT MAINTENANCE SPECIALIST																																					29.5	
EQUIPMENT SPECIALIST																																						29.5
CHIEF TRAINING SPECIALIST																																					30	
TRAINING SPECIALIST																																						30
4 PROV. RES. REPS. (CIVIL / HWY ENGRS.)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—																			70	
4 FIELD ENGINEERS (TRANSPORTATION)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—																				70
4 TRANSPORTATION ECONOMICS	—	—	—	—	—	—	—	—	—	—	—	—																									46	
4 RD. / BRIDGE MAINTENANCE ENGINEERS	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—																				48
25 DISTR. / DPUK REPS. (CIVIL / HIGHWAY.)		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—																				400
4 EQUIPMENT MAINTENANCE SPECIALIST		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—																			72	
																																					247.5	577.5

FIGURE NO. 13 . 3

SCHEDULE OF ESTIMATED CONSULTANT FIELD STAFF REQUIREMENTS

CONSULTANT STAFF	YEAR I												YEAR II												YEAR III												MAN MONTHS	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	EXPAT.	LOCAL
INSTRUCTOR - FIELD ENGINEERING COURSE – 15 . 11 . 2																																					7	
INSTRUCTOR - MGMT. DEVELOPMENT COURSE – 15 . 11 . 3																																					6	
INSTRUCTOR - CHIEF OF MACHINE SHOP COURSE – 15 . 11 . 4																																					11	
INSTRUCTOR - WHSE / PARTS MGMT COURSE – 15 . 11 . 5																																					8	
INSTRUCTOR – TRANS. / PLANNING MGMT. COURSE – 15 . 11 . 6																																					6	
INSTRUCTOR - (ACEH) MASTER MECHANIC COURSE – 15 . 11 . 7																																					12	
INSTRUCTOR - (JAMBI) MASTER MECHANIC COURSE – 15 . 11 . 7																																					12	
INSTRUCTOR - (W.N.T) MASTER MECHANIC COURSE – 15 . 11 . 7																																					12	
INSTRUCTOR - (C.S) MASTER MECHANIC COURSE – 15 . 11 . 7																																					12	
INSTRUCTOR - CHIEF ELECTRICIAN COURSE – 15 . 11 . 10																																					9	
INSTRUCTOR - ENGINEERING DESIGN COURSE – 15 . 11 . 15																																					8	
																																					103	-0-

NOTE : FOLLOW-ON O.J.T, FOR COURSES CONDUCTED BY THESE PERSONNEL, WILL BE CONDUCTED UNDER THE SUPERVISION OF THE CONSULTANT RESIDENT STAFF, (OR THE G.O.I. COUNTERPART RESIDENT STAFF UPON PHASE-OUT OF THE CONSULTANT RESIDENT STAFF .)

FIGURE NO. 13.3

SCHEDULE OF ESTIMATED CONSULTANT FIELD STAFF REQUIREMENTS

CONSULTANT STAFF	YEAR I												YEAR II												YEAR III												MAN MONTHS	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	EXPAT.	LOCAL
INSTRUCTOR - FINANCE & BUDGETING COURSE - 15 . II . 1																																						6
INSTRUCTOR - FIELD ENGINEERING COURSE - 15 . II . 2																																						13
INSTRUCTOR - MGMT. DEVELOPMENT COURSE - 15 . II . 3																																						11.5
INSTRUCTOR - CHIEF OF MACHINE SHOP COURSE - 15 . II . 4																																						11
INSTRUCTOR - WHSE./EQUIP. PARTS MGMT. COURSE - 15 . II . 5																																						8
INSTRUCTOR - TRANS. PLANNING MGMT. COURSE - 15 . II . 6																																						7.5
INSTRUCTOR - (ACEH) MASTER MECHANIC COURSE - 15 . II . 7																																						25
INSTRUCTOR - (JAMBI) MASTER MECHANIC COURSE - 15 . II . 7																																						25
INSTRUCTOR - (W.N.T.) MASTER MECHANIC COURSE - 15 . II . 7																																						25
INSTRUCTOR - (C.S.) MASTER MECHANIC COURSE - 15 . II . 7																																						25
INSTRUCTOR - CHIEF ELECTRICIAN COURSE - 15 . II . 10																																						9
INSTRUCTOR - (ACEH) EQUIP. OPERATION COURSE - 15.11.11, 12, 13 & 14																																						4
																																					-0-	170

NOTE : FOLLOW-ON O.J.T, FOR COURSES CONDUCTED BY THESE PERSONNEL, WILL BE CONDUCTED UNDER THE SUPERVISION OF THE CONSULTANT RESIDENT STAFF, (OR THE G.O.I. COUNTERPART RESIDENT STAFF UPON PHASE-OUT OF THE CONSULTANT RESIDENT STAFF.)

FIGURE NO. 13.3

SCHEDULE OF ESTIMATED CONSULTANT FIELD STAFF REQUIREMENTS

SHEET 5 OF 5

CONSULTANT STAFF.	YEAR I												YEAR II												YEAR III												MAN MONTHS	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	EXPAT.	LOCAL
INSTRUCTOR - (JAMBI) EQUIP. OPERATIONS COURSES - 13.11.11, 12, 13 & 14																																						4
INSTRUCTOR - (W.N.T.) EQUIP. OPERATIONS COURSES - 16.11.11, 12, 13 & 14																																						4
INSTRUCTOR - (C.S.) EQUIP. OPERATIONS COURSES - 15.11.8, 12, 13 & 14																																						4
INSTRUCTOR - ENGINEERING DESIGN COURSE - 13.11.15																																						8
																																						20

SUB - TOTAL - Sheet 1	92.5	81.5
SUB - TOTAL - Sheet 2	247.5	577.5
SUB - TOTAL - Sheet 3	103	-0-
SUB - TOTAL - Sheet 4	-0-	170
SUB - TOTAL - Sheet 5	-0-	20
GRAND TOTALS	443	829

NOTE : FOLLOW-ON O.J.T, FOR COURSES CONDUCTED BY THESE PERSONNEL, WILL BE CONDUCTED UNDER THE SUPERVISION OF THE CONSULTANT RESIDENT STAFF, (OR THE G.O.I. COUNTERPART RESIDENT STAFF UPON PHASE-OUT OF THE CONSULTANT RESIDENT STAFF.)

SECTION 14

FOREIGN ASSISTANCE

14.1. OVERALL PROGRAM

The principal feeder road program elements, as summarized in paragraph 9.1 are as follows* :

(1) Institutions

(a) Development of more effective organizations and responsibilities.

(b) Refinement and establishment of more effective intra-organizational relationships and procedures.

(2) Technical

(a) Development of uniform standards of design, construction and maintenance.

(b) Development of methodology for selection of District roads and bridges for development.

(c) Development and implementation of improved planning and programming procedures.

(d). Development of written procedures and manuals for implementing (a) through (c) above.

(3) Refinement of procedures for funding of District road and bridge programs.

(4) Improved staffing of Central Government, Provincial and District organizations associated with District roads.

(5) Training of personnel associated with District roads to include present staff and to-be-recruited personnel.

(6) Equipment procurement, particularly for government performed District road and bridge maintenance.

(7) Equipment maintenance and maintenance facilities.

---

* These elements are for the basic three year program set forth in the Study Program Terms of Reference, extended an additional two years at the direction of the GOI Steering Committee. This extended five year program period encompasses the time estimated by the consultant to be required to complete initial rehabilitation of roads and bridges, to complete the construction and equipping of additional work shops, to complete procurement of road maintenance equipment and to complete recruiting and training of additional GOI personnel.

(8) Physical programs including maintenance and development (rehabilitation, upgrade and new construction).

(9) Consultant support.

(10) International donor agency assistance.

14.2. RECOMMENDED AREAS FOR FOREIGN ASSISTANCE

As set forth in the Study Program Terms of Reference, it was envisioned that participation by an international donor or assistance agency in the implementation of the feeder roads program, would include a donor financed component of the project with assistance in the following areas :

(1) Development of methodology for selecting roads and establishing priorities, and integrating improvements with rural development;

(2) Training programs for Indonesian engineers, technicians and administrators to plan, design, construct and maintain a feeder road work;

(3) Develop the local road construction industry;

(4) Improved management systems for financial and operational control of the construction and maintenance program;

(5) Research and development in the use of materials, techniques of construction, economical design, specifications and construction/maintenance operation; manuals appropriate for low volume roads; and

(6) Improved plant, equipment and materials to establish a rural road construction and maintenance capability.

The consultant's assessment of conditions and needs, and specific recommendations developed for the program, confirm the need for and include the above listed elements. Further, it is the consultant's conclusion that these are the areas appropriate for foreign assistance. The consultant does not recommend priority be given for foreign-financed assistance for actual physical program execution (i.e., road and bridge maintenance, rehabilitation, replacement, upgrade or new construction) or for costs for additional GOI staff.

RECOMMENDATION :

In summary the consultant recommends assistance by an international donor agency to the Government of Indonesia in execution of the feeder roads management program in the following areas.

(1) Expert assistance (consultants). (Reference : Sections 10 and 13)

(2) Training program, aids, equipment and facilities. (Reference : Section 11 and 12).

(3) Equipment maintenance workshop facilities. (Reference : Sections 10,11 and 12).

(4) Road maintenance equipment. (Reference : Sections 10 and 12).

(5) Funds for the above. (Reference : Section 12, Table 9.1 and Figures 9.2 through 9.7).

Assistance is recommended in the following priorities.

14.3. PRIORITY ONE ASSISTANCE

14.3.1. CONSULTANT ASSISTANCE

The consultant recommends expert assistance be provided through direct contract with a consultant to carry out the scope of work set forth in Section 13.

14.3.2. TRAINING PROGRAM

The consultant recommends that training aids, equipment and facilities be procedured or provided as described in Section 11 and 12.

14.3.3. UPGRADE OF MAINTENANCE FACILITIES FOR TRAINING

The consultant recommends that four of the five existing Provincial workshop (one in each Province) required to support the training program, be upgraded as described in Sections 10, 11 and 12.

14.4. PRIORITY TWO ASSISTANCE

14.4.1. ADDITIONAL MAINTENANCE FACILITIES

The consultant recommends that the fifth existing Provincial workshop be upgraded and fifteen additional workshops be constructed and equipped as set forth in Sections 10and12.

14.4.2. EQUIPMENT FOR ROAD MAINTENANCE

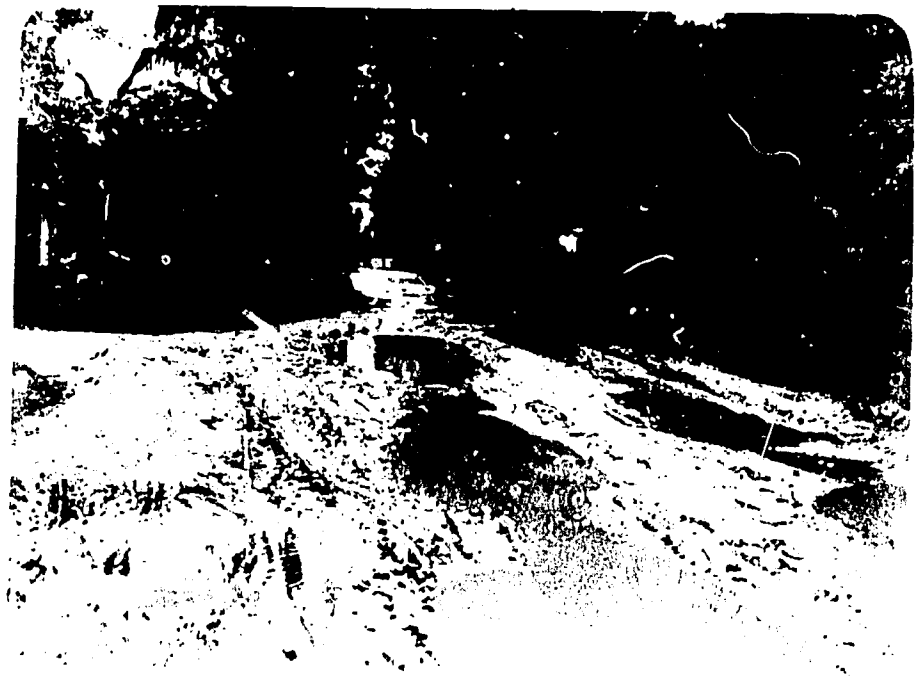
The consultant recommends that equipment (with a year's supply of parts as recommended by the manufacture) estimated to be required for the first three years of the recommended five year road maintenance program be procured or provided as set forth in Sections 10 and 12.

14.5. PRIORITY THREE ASSISTANCE

The consultant recommends that equipment (with a year's supply of parts as recommended by the manufature) estimated to be required for the fourth and fifth years of the recommended five year road maintenance program be procured or provided as set forth in Sections 10 and 12.

District Road in Lham Baro

Aceh Province

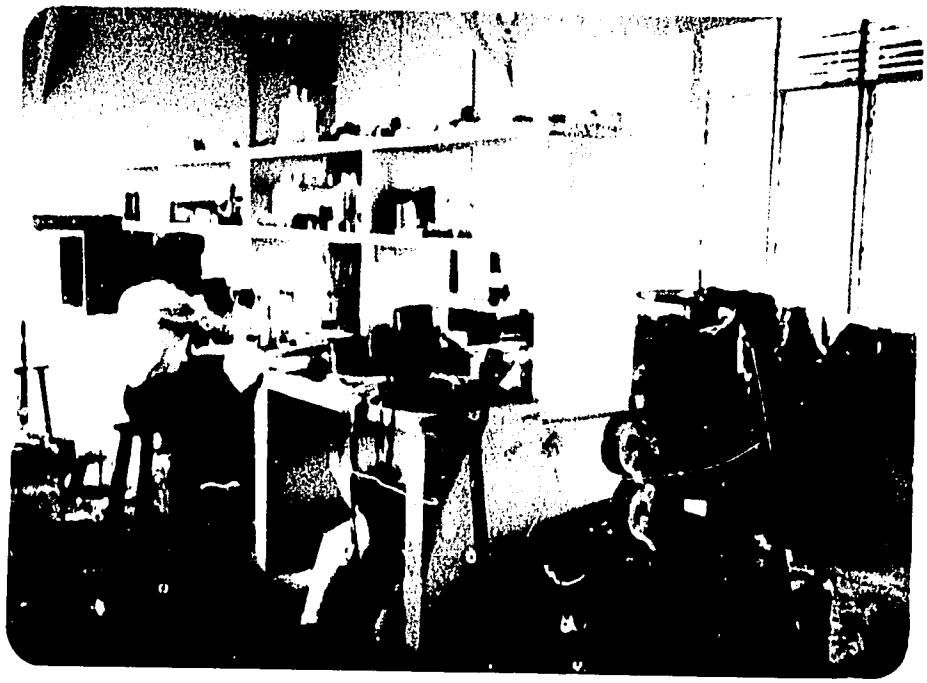


District Road in Aceh Besar

Aceh Province

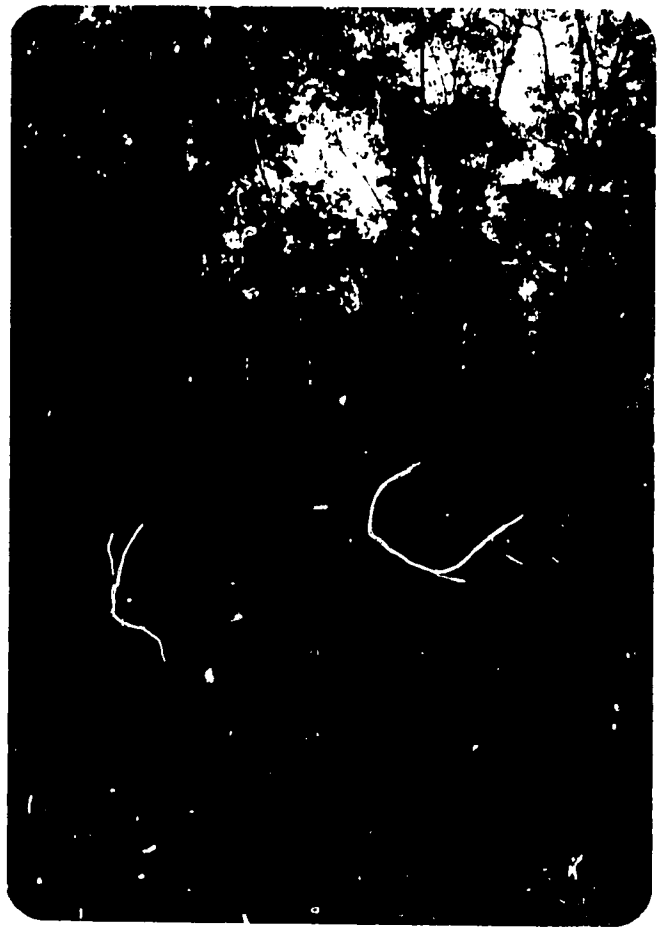
District Road Rehabilitation in Kotamadya
Sabang, Aceh Province

District Bridge near Lhoknga, Aceh Province



Provincial Soil Laboratory,
Aceh Province

Base Failure District Road
Batanghari District
Jambi Province

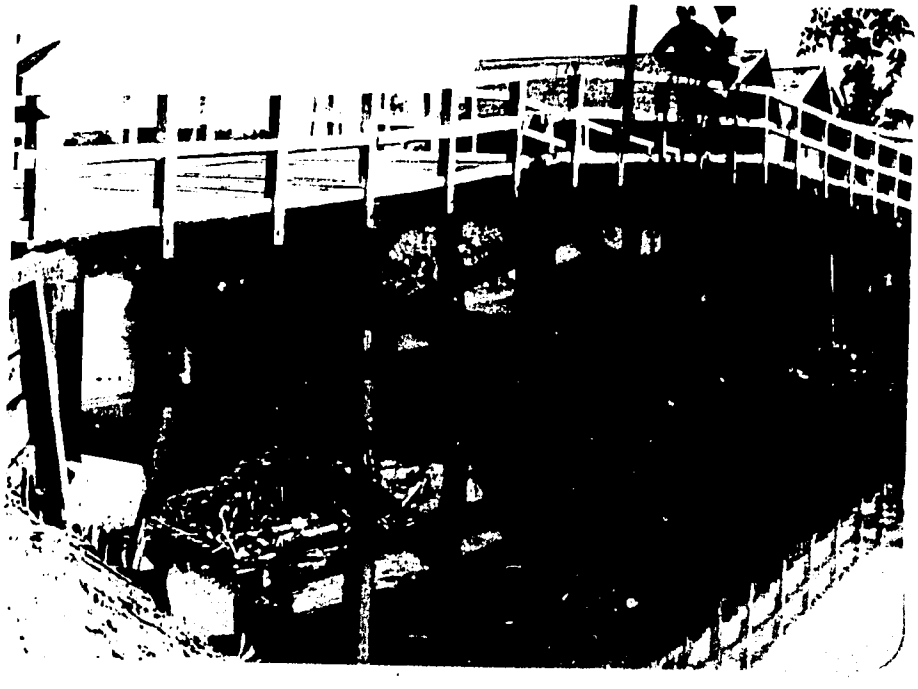


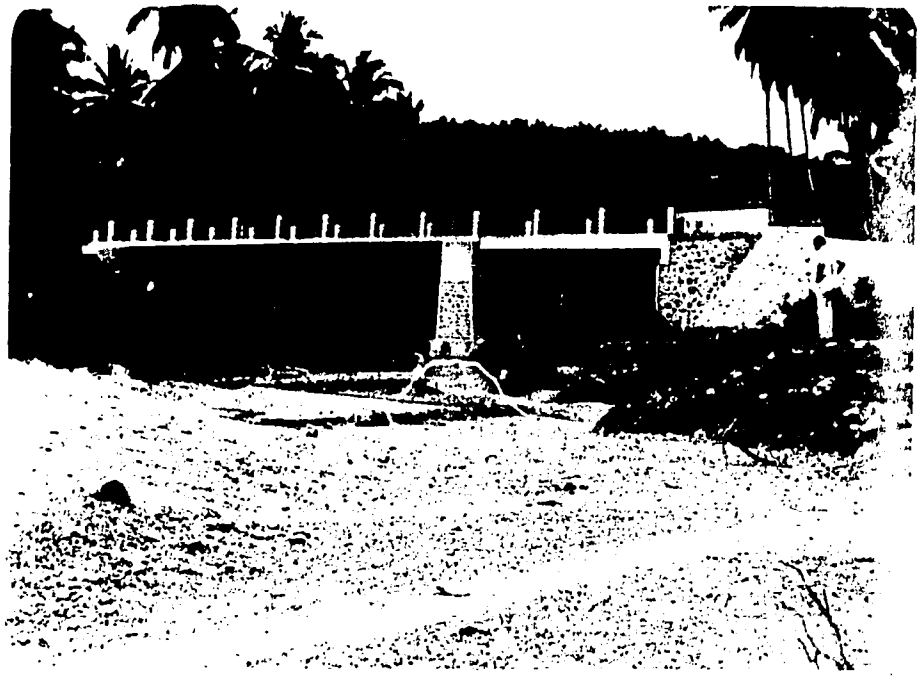
Unimproved District Road
Bungo-Tebo District
Jambi Province

River Gravel used in District
Road Construction
Batanghari District
Jambi Province

Road Rehabilitation Work
Tanjung Jabung District
Jambi Province

Timber Bridge
Tanjung Jabung District
Jambi Province

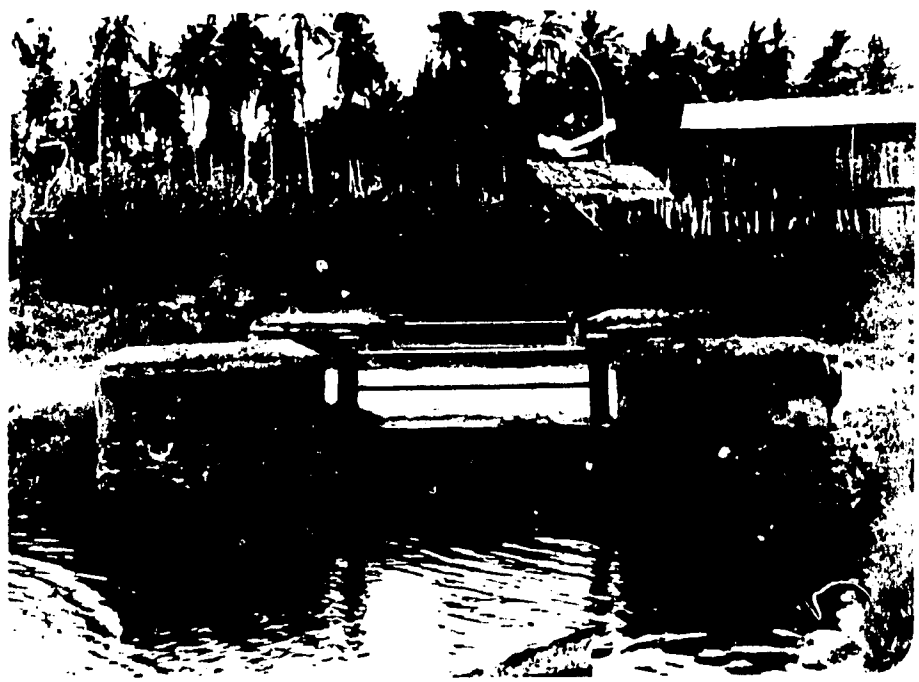




New Long Span Bridge on Donggala
Surumana, Donggala District
Central Sulawesi Province

Road Construction on Poso – Kasiguncu Road
Poso District
Central Sulawesi Province

Storage of Heavy Equipment in Damaged Condition
Central Sulawesi Province



Existing Slab Bridge on Palu – Biromaru Road
Donggala District, Central Sulawesi Province

Sanginora – Wuasa District Road
Covered by Plantation, Poso District
Central Sulawesi Province

District Road in Bima
West Nusa Tenggara Province

District Road in Central Lombok
West Nusa Tenggara Province

District Road in Central Lombok
West Nusa Tenggara Province

Road Rehabilitation on Tanjung Road (West Lombok)
West Nusa Tenggara Province

Bridge Construction in Central Lombok
West Nusa Tenggara Province

SECTION 16

GLOSSARY OF TERMS AND ABBREVIATIONS

AASHTO	–	American Association of State Highway and Transportation Officials
ACH	–	Province of Aceh
APBD	–	Funds which are raised from land taxes and various other taxes and fees (APBD I – Provincial level, APBD II – District level)
APPL	–	Application
APPR	–	Approximate
ASST	–	Assistant
ASTM	–	American Society for Testing Materials
BAPPEDA	–	(Badan Perencanaan Pembangunan Daerah) Regional Planning Board (Provincial Planning Board)
BAPPEKA	–	(Badan Perencanaan Pembangunan Kabupaten) District Planning Board
BAPPENAS	–	(Badan Perencanaan Pembangunan Nasional) National Planning Board
BINA MARGA	–	Directorate General of Highways at the Central Government level. Highway or road organization at other levels of government
BIPRAN	–	Directorate of Planning under the Directorate General of Highways
B.M.	–	Bina Marga
B.R.I.	–	Bank Rakyat Indonesia
BUPATI	–	The appointed head of the Kabupaten unit of government
CAMAT	–	The chief administrator of a Kecamatan, usually appointed by the Bupati

CBR	–	California bearing ratio – a test used to evaluate the strength of subgrade or subbase for pavement
CIPTA KARYA	–	Directorate General of Housing and Buildings
CFM	–	Cubic feet per minute
CONC	–	Concrete
CONST	–	Construction
CONT	–	Contractor
CS	–	Provice of Central Sulawesi
CYLIN	–	Cylinder
DEPT	–	Department
DESA	–	An administrative unit of government below the Kecamatan level (a village)
DEVEL'T	–	Development
DGH	–	Directorate General of Highways (Bina Marga)
DINAS	–	A Provincial agency of a central government department
DIR	–	Director or directorate
DISTR	–	District
DIV	–	Division
DOC	–	Document/s
DOHA (DHA)	–	Department of Home Affairs
DPMT & J	–	(Direktorat Penyelidikan Masalah Tanah dan Jalan) Directorate of Soils Research & Material Control for Roads
DPU	–	Department of Public Works
DPUK	–	District Public Works Service
DPUK/S	–	Combined District/Sector Public Works Service
DPUP	–	Provincial Public Works Service
DURP	–	(Daftar Usulan Rencana Proyek) – A document which includes detailed plans and cost estimated for approved Inpres projects

EA	–	Each
ECON	–	Economist of economics
ELEC	–	Electric or electician
ENGR	–	Engineer
EQUIV	–	Equivalent
EXPAT	–	Expatriate
F	–	Fair
FNDS/MTLS	–	Foundations/materials (specialist)
FURN	–	Furnished
FY	–	Fiscal year
G	–	Good
GOI	–	Government of Indonesia
GOTONG ROYONG	–	Voluntary self-help for community projects
GOVT	–	Government
HWY	–	Highway
HYD	–	Hidraulic
IDA	–	International Development Agency
INDO	–	Indonesia
IGN	–	Ignition
INJ	–	Injector or injection (diesel)
INPRES	–	A special fund established by Presidential instruction to be used for financing local development projects
INPRES DESA	–	A program designed specifically for village development
INPRES JALAN	–	A program designed specifically for the development of District roads. Based upon the principal of equal development
INPRES I	–	A program designed specifically for provincial development based upon population

INPRES II	–	A program designed specifically for district development based upon population
INTRO	–	Introduction
INV	–	Inventory
IPEDA	–	Local land taxes
IR	–	Engineer
ITB	–	Institute of Technology – Bandung
ITS	–	Institute of Technology – Surabaya
JALAN	–	Road
JMB	–	Province of Jambi
JR	–	Junior
KABUPATEN	–	A District. The next smaller governmental unit below a Province, an administrative grouping of Kecamatans
KECAMATAN	–	An administrative unit of government subordinate to the Kabupaten (a sub-district)
KOTA MADYA	–	A municipality having the same administrative level as a Kabupaten
KM	–	Kilometer
KPWD	–	Kabupaten Public Works Department (service)
KVA	–	Kilo-volt-amperes
KW	–	Kilowatts
LENGTH M	–	Length in meters
LOC	–	Location
LT	–	Liter
LUBE	–	Lubrication
MACH	–	Machine
MAINT	–	Maintenance
MECH	–	Mechanic

MGMT	–	Management
MOS	–	Months
MP & TRANS	–	Department of Manpower and Transmigration
MTR	–	Mataram (in the Provice of West Nusa Tenggara)
OFC	–	Office
OJT	–	On the job training
P	–	Poor
PADAT KARYA	–	Literally, "Labor Intensive" – A central government program to provide short term employment during the dry season
PELITA III	–	GOI-third five year development program – FY 79/80 through FY 83/84
PEND	–	Pending
PPWD	–	Provincial Public Works Department (service)
PRD	–	Provincial roads division
PROV.RES.REP	–	Provincial Resident Representative
P.S.I.	–	Pounds per square inch (pressure)
PTPT	–	The Directorate of Land Preparation for Transmigration Settlement, under the Directorate General of Highways (Bina Marga)
PW	–	Public Works (Department of Public Works)
R and D	–	Research and Development
RD/S	–	Road/s
REG.REPR	–	Regional Representative
RFP	–	Request for proposal
R.R.	–	Rural Roads
S	–	Scrap
SCH	–	School
S.D.	–	Sub Directorate

SEC	–	Section or Sector
SECTOR	–	A public works division under the Provincial Public Works service with responsibility for National and Provincial roads and highways within a given area, usually a Kabupaten
SHT	–	Sheet
SPEC	–	Specialist or specification
S.P.K.	–	(Surat Perintah Kerja) Literally "Work Order" – This document is normally issued to a "Labor Only" contractor by the chief of DPUK for projects not tendered and valued at Rp 10 million or less
SR	–	Senior
SUB.DEV.BUR	–	Sub-Development Bureau
SUPP	–	Support
SURV	–	Survey or surveyor
SYS/S	–	System/s
TECH	–	Technician or technical
TM	–	Transmigration
TRANS	–	Transport or transportation
TRNG	–	Training
USAID	–	United States Agency for International Development
VIB	–	Vibratory (compactor)
WNT	–	Province of West Nusa Tenggara
WHSE	–	Warehouse
YR	–	Year

SECTION 17

REFERENCES

1. Winfrey, Robley Economic Analysis for Highways Scranton, Pennsylvania – International Texbook Company, 1969.

2. Anthony, Robert V. Management Accounting Homewood, Illinois-Richard D. Irwin, 1964.

3. Adler, Hans A. Economic Appraisal of Transport Projects Bloomington, London – Indiana University Press, 1971.

4. Fromm, Gary Transport Investment and Economic Development Washington, D.C. – The Brookings Institution, 1965

5. Drucker, Peter F. Management Tasks Responsibilities Practices New York – Harper and Row, 1974

6. Dasgupta, Partha and Sen, Amartya and Marglin, Stephen Guidelines for Project Evaluation New York – United Nations, 1972

7. Allal,M. and Edmonds G.A. Manual on the Planning of Labor Intensive Road Construction Geneva – International Labor Office, 1977.

8. D.P.U.P. Study Final Report Prepared for Department Pekerjaan Umum and Tenaga Listrik, Direktorat Jenderal Bina Marga, Jakarta, December 1977.

9. Project Selection Criteria, Budgetary Policy Observations and Assumptions Prepared for National Cooperative Highway Research Program, Highway Research Board National Academy of Sciences. Washington, D.C. 1974.

10. Indonesia Staff Appraisal Report of A Fifth Highway Project Prepared for Transportation Division Regional Projects Department East Asia and Pacific Regional Office, The World Bank, report No. 2260–IND, May 3, 1979.

11. Program Advisor's Criteria to Guide the Districts in Developing Highway Improvement Priority Lists Prepared for State of California Department of Transportation, February 10, 1978.

12. Some Development Problems of Banda Aceh Municipality Prepared for Drs. Djakfar Ahmad, Ma. The mayor of Banda Aceh Minicipality, Indonesia. Presented at 24th World Congress of the International Union of Local Authorities, Manila, Phillipines, 5–9 February 1979.

13. Highway Development In Indonesia Prepared for Directorate General of Highways, Ministry of Public Works, Republic of Indonesia in conjunction with the Road Engineering Associates of Asia & Australia, Symposium on National Highway Progress and Future Development Plans, Kuala Lumpur, Malaysia, 16--18 February 1979.

14. Budget Activity Schedule Prepared for Department of Transportation Director's Office -- Financial Affairs, Business and Transportation Agency, State of California, April 13, 1979.

15. Ministry of Overseas Development Manual of Projects Appraisal Prepared for United Kingdom Ministry of Overseas Development Eland House Stag Place, London SWL, April 1970.

16. Regional Development Problems In Aceh Prepared for Syah Kuala University Faculty of Economics and Aceh Development Board, Drs. Djakfar Ahmad, 20--31 Agustus 1973.

17. Sumatra Regional Planning Study Cipta Karya & Robert R Nathan Assoc. Inc., Washington, D.C., May 1975.

18. Yogyakarta Rural Roads Study, Final Report Bina Marga and Enex of New Zealand, August 1978.

19. Inception Report for a Task Force Study of Operational Procedures in the Highway Planning and Programming Sub-Directorate DPU/Bina Marga, July 1979.

20. A Study of the Road Works Activities The Provincial Department of Public Works West Sumatra.

21. Initial Guidelines for Regional Betterment Offices, Screening Feasibility Project Bipran/Bina Marga -- Enex, November 1976

22. Preliminary Report on Guidelines and Econimic Analysis Procedures Screening Feasibility Project Idem, December 1976.

23. Report of Consultation IBRD -- Loan Highway Project Bina Marga, February 1979

24. Highway Planning Pilot Study -- Aceh Appendix V -- Economic Projections 1978/1983 Bina Marga, June 1974

25. Standard Cost Analysis of Road and Bridge No. 02/ST/BM/73 Idem

26. Final Report on the 1977 Roadside Origin and Destination Survey, Departemen Perhubungan dan Direktorat Jenderal Bina Marga -- Departemen Pekerjaan Umum, February 1979.

27. A Manual for Applying the Critical Path Method to Highway Department Engineering

and Administration Prepared for U.S. Bureau of Public Roads, by E.S. Preston & Assoc., Ltd. November 1963, variously paged.

28. Changwat Engineering Management Analysis Prepared by the Ralph M. Parsons Company, contractor in association with the Thai Engineering Consultants company subcontractor for the Office of Accelerated Rural Development Royal Thai Government and The Agency for International Development, Thailand. United States of America, 30 January 1975.

29. Land Transportation Survey for Indonesia By DeLeuw, Cather and Co., Chicago, 1961.

30. The Sense of Low Cost Roads in Indonesia by Hadjisaroso Poernomosidi Jakarta, Director General of Higways, Republic of Indonesia.

31. Report on Roads and Transport Planning in Tropical and Sub-Tropical Countries By Cooper, L. – Great Britain Transport and Road Research Lab. TRRL Supplementary Report 162, 1977.

32. Opportunities for Cost Reduction in the Design of Transport Facilities for Developing Regions, by California University. Institute of Transportation and Traffic Engineering. Washington , D.C., U.S. Department of Transportation, 1970.

33. Road Transport Investment Model for Developing Countries By Robinson, R. et al. – Great Britain Transport and Road Research Laboratory TRRL Laboratory Report 674, 1975.

34. Figures, 1977 Prepared by Badan Perencanaan Pembangunan Daerah Propinsi Jambi (Bappeda), and Kantor Sensus dan Statistik Propinsi Jambi.

35. Feasibility Study – Sumatra, Padang–Medan, Vol.II – Text, Kamsax/Berger for U.N.D.P. (IBRD) December 1971.

36. Booth, Anne, "Kabupaten Development Budgets". Bulletin of Indonesian Economic Studies, Vol. No. I, Page 75–81 March 1974

37. Van Leuwen, Robert "Central Government Subsidies for Regional Development". Bulletin of Indonesian Economic Studies, Vol. XI, NO. I, March 1975

38. Asian Development Bank, "Economic and Financial Appraisal of Bank – Assisted Projects". Occasional Papers No. XI, January 1978.

39. Ibrahim, A. Madjid and Fisher H. Benjamin, "Regional Development Studies and Planning in Indonesia". Bulletin of Indonesian Economic Studies, Vol. XV, No. 2 – July 1979.

40. Benson, John B. Jr., Analysis of County Road Management Functions – TRB Bull.

194, Page 28–32, 1958.

41. Malcohn, D.G., and Earich, D.R., Development of an Integrated Highways Management System Highway Res. Record No. 87, page 124–143, 1965.

42. Labor Intensive Road Construction ILO, Geneva 1978

43. An Overview of the Operations and Practices of the Regional Planning Bodies (Bappenas)

44. Ruslan Diwiryo Rural Road In National Development, Directorate of City and Regional Planning, Ministry of Public Works, RI, August 1979.

45. Nusa Tenggara Barat Dalam Angka Central Bureau of Statistic, Province of N.T.B., 1977.

46. Pelita II Buku I (APBN & APBD)
Bidang – Bina Marga
– Pengairan
– Cipta Karya
Oleh – Dinas Pekerjaan Umum Propinsi Dati I N.T.B.

47. Pelita II Buku II (APBN & APBD)
Bidang – Bina Marga
Oleh – D.P.U.P. – Dati I – N.T.B.

48. Program Pelita III (APBN & APBD)
Bidang – Bina Marga
– Pengairan
– Cipta Karya
Oleh – D.P.U.P. – Dati I – N.T.B.

49. Peta Kondisi Jalan Pada Akhir Maret 1978, Jakarta, Mei 1979, Direktorat Jenderal Bina Marga

50. Basic Guide for Equipment Performance (P.5) first edition.

51. Basic Guide for Equipment Maintenance (P.4) first edition.

52. System for Equipment Maintenance – Workshop Administration.

53. Guidance for Equipment – Dista Public Work Service.

54. Aceh Road Betterment Project – Monthly Progress Report by Louis Berger International Inc., May 1979.

55. Maynard, H.B., Editor–In–Chief, Top Management Hand Book Mc Graw–Hill, New York, 1960

56. Matching Employment Opportunities and Expectations, A Programme of Action for Ceylon, The report of an Inter-Agency Team organized by the International Labor Office, Geneva, 2 Vols. (1) Report (2) Technical Papers, 1971

57. Mangum, Garth, Snedeker, David · Manpower Planning for Local Labor Markets Olympus Publishing Co., Salt Lake City, Utah 1974.

58. Mills, Daniel Quinn Industrial Relations and Manpower In Construction, MIT Press Cambridge, Massachusets 1972.

59. Area Hand Book for Indonesia, DA Pam 550–39, U.S. Government Printing Office, Washington, D.C., March 1970.

60. Page, G. Terry The Guide to Training and The Future, Kogan Page Ltd., London 1972.

61. Barthowmen, D.S. Manpower Planning, Penguin Books Ltd., Middlesex, England, 1976.

62. Guidelines on the Organization of Labor Intensive Works Programmes, International Labor Office, Geneva, March 1977.

63. Townsend, Robert L. A Proposed Procedures for Planning and Conducting an OJT/ Counterpart Training Program, Tehran, Iran, February, 1976.

64. Mangum, Garth L. and Townsend, Robert L. Meeting the Staff Competency Needs of Indonesian Manpower Planning, Report and Recommendations for a Three Phase Staff Training Program, Jakarta, Indonesia, November 1977.

65. Michalk, Donald F. and Tager, Edwin G. Making The Training Process Work, Haper & Row, New York, 1979.

66. Patten, Thomas H. Jr. Manpower Planning and the Development of Human Resources, Wiley – Interscience, New York, 1971.

67. Craig, Robert L. Training and Development Hand Book, Mc Graw Hill, New York, Second Edition, 1976.

68. Maynard, H.B. Editor–In–Chief Hand Book of Business Administration, Mc Graw Hill, New York, 1976.

69. Odiorne, George S. Training by Objectives, The Macmillan Company, New York 1970.

70. Management Training for Rural Public Works — Final Report 2 Vols., The Ralph M. Parsons Company, Pasadena — Bangkok, Thailand, USAID Project No. 493–11–810–102, 1971.

71. Core Group on Employment Strategy Discussion Paper No.5, ILO April 1978.

72. A National Strategy for Training in Regional Development Planning and Management, Summary and Conclusions, Prepared for Badan Pendidikan dan Latihan Departemen Dalam Negeri Government of Indonesia, July 1979.

73. Riddell, James C. Maximizing Human Resources in A Finite Labor Situation, Labor Economics of the Gbannah Mah, U.S. ISSN 0084–1793, September 1978.

74. Mc Voy, Edgar C. Training for Development in Indonesia, Manpower Supply and Requirements, International Manpower Institute, Department of Labor, U.S.A., April 1969.

75. Training in Regional Development in Indonesia, Prepared for the Regional Development Division of Bappennas, Colin Rosster, July 1974.

76. Bridge Design and Construction In Kalimantan Barat, J.A.N. Bonniface and G.J. Kemp.

77. Proyek Pengembangan Jembatan-Beton Pratekan Pracetak, Direktorat Jenderal Bina Marga, D.P.U.

78. Implementation Report — Supply of Prefabricated Steel Bridging Material Indonesia, Snowy Mountains Engineering Corporation, September 1979,

79. Registrasi Unsur Pelaksana Pembangunan di Mataram 1977 — 1978 Dit. Jen. Cipta Karya, Departemen P.U. Building Information Center Jl. Langka 9 — Mataram.

80. Transportation Technology Support for Developing Countries (Compendium 1 through Compendium 6), Transportation Research Board, Commission on Sociotechnical systems, National Research Council, National Academy of Science. Washington, D.C., 1978.

81. A Development Strategy for East Indonesia. Prepared for the Canadian International Development Agency and the Ministry of Public Works, by the Province of Alberta, Canada, May 1977.

82. Proceedings from Regional Seminar on Low Cost Roads, Directorate General of Highways, Ministry of Public Works, Republic of Indonesia in conjuction with The Road Engineering Association of Asia and Australia, Bandung, 22 — 26 November 1976.

83. A Guide for Pavement Design (Flexible), No. 04/PD/BM/1974, Directorate General of Bina Marga, April 1974.

84. Loading Specifications for Highway Bridges, No.12/1970, Directorate General of Highways, Bina Marga.

85. Diwiryo Ruslan Pengantar Traffic Engineering, Directorat Jenderal Bina Marga

86. Anas Aly, Mohamand Tinjauan terhadap Buku Pedoman Penentuan Tebal Perkerasan Flexible Jalan Raya No.04/PD/BM/1974, Direktorat Bina Program Jalan – Direktorat Jenderal Bina Marga, Maret 1977.

87. Standard Specifications for Geometric Design of Expressway and Freeway, No. 13A/1976, Directorate of Planning, Directorate General of Bina Marga.

88. Standard Specifications for Geometric Design of Rural Highways No.13/1970 Directorate General Bina Marga.

89. Tabel Rambu Lalu Lintas Jalan Raya merupakan Himpunan Kode 2 Nomor untuk Pekerjaan Penampang Memanjang Jalan Raya, Direktorat Bina Program Jalan, Direktorat Jenderal Bina Marga, July 1977.

90. Sistim Perhitungan Lalu Lintas Rutin-Petunjuk Pelaksanaan, Direktorat Bina Program Jalan, Direktorat Jenderal Bina Marga, Maret 1979.

91. Sumatera Regional Planning Study, Cipta Karya & Robert R. Nataha Assoc. Inc., Washington D.C., June 30, 1976.

92. Maintenance Planning and Supervision, Highway Research Record Number 347, Highway Research Board, 1971.

93. Pignataro, Louis J. Traffic Engineering the Theory and Practice, Prentice–Hall, Inc., Englewood Cliffs, New Jersey, 1973.

94. AASHTO Materials, American Association of State Highway and Transportation Officials, 12th edition 1978.

95. Matson, Theodore.M. and Smith, Wilbur S. and Hind, Frederick W. Traffic Engineering, Mc Graw Hill Book Company, 1955.

96. A Policy on Geometric Design of Rural Highways, 1965, American Association of State Highway Officials, 1977.

97. Guide Specifications for Highway Construction, American Association of State Highway and Transportation Officials, 1979.

98. AASHTO Manual for Bridge Maintenance 1976, American Association of State Highway and Transportation Officials, February 1976.

99. AASHTO Maintenance Manual 1976, American Association of State Highway and Transportation Officials, February 1976.

100. Concrete Pipe Instalation Manual, American Concrete Pipe Association, July 1973.

101. Asphalt Surface Treatments and Asphalt Penetration Macadam, The Asphalt Institute, January 1975.

102. Testing Hardened Concrete : Non destructive Methods, American Concrete Institute Monograph series, 1976.

103. Asphalt Overlays and Pavement Rehabilitation, The Asphalt Institute, Manual series No.17, November 1977.

104. Handbook of Steel Drainage & Highway Construction Products, American Iron and Steel Institute, 1971.

105. Standard Specifications for Highway Bridges, The American Association of State and Transportation Officials, 1977.

106. Urquhart, Leonard Church Civil Engineering Handbook, Mc Graw Hill Book Company, 1962.

107. Merritt, Fredrick S. Standard Handbook for Civil Engineers, Mc Graw Hill Book Company, 1976.

108. Interim Specifications Bridges, 1978, The American Association of State Highway and Transportation Officials, 1978.

109. A Guide for Protective Screening of Overpass Structures, The American Association of State Highway and Transportation Officials, 1969.

110. A Guide for Accomodating Utilities on Highway Rights – of – Way, American Association of State Highway and Transportation Officials, 1970.

111. Instruction Manual for Highway Bridges and Incidental Structures, American Association of State Highway Officials, 1973.

112. Guide on Evaluation and Attenuation of Traffic Noise, American Association of State Highway and Transportation Officials, 1974.

113. Highway Drainage Guidelines, American Association of State Highway and Transportation Officials, 1975.

114. An Informational Guide for Roadway Lighting, American Association of State Highway and Transportation Officials, March 1976.

115. AASHTO Highway Definations, American Association of State Highway Officials, 1968.

116. Suggestions and Guidelines for Combating Shortages and Minimizing the Effect of Price Uncertainties for Materials and Fuel in Construction, AASHTO Operating subcommittee on Construction, 1974.

117. A Design Guide for Widlife Protection and Conservation for Transportation Facilities, American Association of State Highway and Transportation Officials, 1976.

118. Recommended Policy on Maximum Dimensions and Weights of Motor Vehicles to be operated over the Highways of the United States, American Association of State Highway and Transportation Officials, 1974.

119. A Guide for Highway Lanscape and Environmental Design, American Association of State Highway and Transportation Officials, 1970.

120. Guide Specifications for Motorist Aid Systems, American Association of State Highway and Transportation Officials, 1974.

121. Highway Design and Operational Practices Related To Highway Safety, American Association of State Highway and Transportation Officials, 1974.

122. Manual for Maintenance Inspection of Bridges 1978, American Association of State Highway and Transportation Officials, 1979.

123. Guidelines for Skid Resistant Pavement Design, American Association of State Highway and Transportation Officials, 1976.

124. Design Handbook in Accordance with the Strength Design Method of ACI 318–71, American Concrete Institute, Detroit, 1978.

125. Slab Design in Accordance with ACI 318–77, Supplement to : Design Handbook in accordance with the Strength Design Method, American Concrete Institute, Detroit 1978.

126. ACI Manuals of Concrete Practice 1979, American Concrete Institute, Detroit 1979.

127. Standard Plans, Department of Transportation State of California, March 1977.

128. Fundamentals of Prestressed Concrete Design, Prestressed Concrete Institute, Inc., May 1973.

129. Bridge Planning and Design Manual, State of California, Department of Public Works, Division of Highways, 1979.

130. Program Lima Tahunan Pembinaan Jaringan Jalan di Indonesia, Direktorat Jenderal Bina Marga, Departemen Pekerjaan Umum, Juni 1979.

131. A Study of the Roadworks Activities, The Provincial Department of Public Works West Sumatra, Directorate General of Highways, Department of Public Works.

132. Standardisasi Pengaspalan dengan Butas, No.04 /1969, Institut Pendidikan Pekerjaan Umum and Tenaga Listrik, Departemen Pekerjaan Umum dan Tenaga Listrik.

133. Standard Bangunan Atas Jembatan Type Koposit Muatan Kelas I, II, dan III, Direktorat Bina Program Jalan, Direktorat Jenderal Bina Marga.

134. Penjelasan dan Ketentuan Tambahan untuk Peraturan Muatan untuk Jembatan Jalan Raya No. 12/1970, Direktorat Bina Program Jalan, Direktorat Jenderal Bina Marga, Juni 1977.

135. Standardisasi Analisa Biaya Pembangunan Jalan dan Jembatan No.02/ST/BM/73, Direktorat Jenderal Bina Marga.

136. Peraturan Perencanaan Geometrik Jalan Raya . No. 13/1970, Direktorat Jenderal Bina Marga.

137. Standard Spesifikasi untuk Jembatan Jalan Raya type Balok Gabungan, No.01/1969, Direktorat Jenderal Bina Marga.

138. Peraturan Pelaksanaan Pembangunan Jembatan, No.04/ST/MB/1974, Direktorat Jenderal Bina Marga.

139. Peraturan Pelaksanaan Pembangunan Jalan Raya, No.01/ST/BM/1972, Direktorat Jenderal Bina Marga.

140. Building Code Requirements for Reinforced Concrete (ACI 318–77), American Concrete Institute, Detroit 1977.

141. Equipment Specifications, The Citanduy River Basin Development Porject, submitted by Engineering Consultants, Inc., Denver, Colorado, U.S.A., November 1976.

142. Inception Report on Highway Rehabilitation Project in North Sumatera and Central Java, Mitsui Consultants Co. Ltd., June 1973.

143. Construction Equipment Guide, JI Case, Wisconsin, U.S.A.

144. Request for Proposal for Study Program for Feeder Roads Managements .I, Ministry of Public Works, Directorate General of Highways, July 1978.

145. Daftar Gaji Pokok Pegawai Negeri Sipil Berdasarkan Peraturan Pemerintah Nomor-7 Tahun 1977, March 1, 1977.