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Urban Policy in Peru

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Operations Review and Support Unit,
Urban Projects Department
Latin America and the Caribbean Urban Projects Divison

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FOREWORD

This report has been prepared to facilitate a sector dialogue between the Urban Projects Division of the Latin America and the Caribbean Regional Office (LAC) and the Government of Peru. The report is based on the findings of a mission to Peru in September 1980 by Mr. H. Richardson, assisted by Mr. A. Carroll (consultants) and incorporates material from the Bank's country economic memorandum of April 13, 1979. The report was reviewed and processed with the assistance of Mr. Z. Shalizi of the Urban Operations Review and Support Unit of the Bank's Central Projects Staff and Mr. A. Harth-Deneke of the LAC Regional projects staff.

The report focuses on selected problems and policy issues that will have to be addressed by the Government of Peru when preparing a National Urban Development Strategy. The main text, which includes four sections, begins with a Summary and suggested recommendations. Section I (based on Annex I) presents a brief background description, and is primarily intended for readers unfamiliar with Peruvian conditions. Section II discusses some general considerations and basic principles that the Government will need to take into account in formulating its urban policy. The focus of Section III is more specific; it deals with particular issues such as the restructuring of the Lima metropolitan region and the development of secondary cities, as well as issues in urban land, urban housing and services, urban transport and administrative decentralization. Section IV emphasizes the need to distinguish between actions and investment programs and their respective timing. It also contains some proposals for studies that might be undertaken by the Government to help resolve some of the more difficult policy problems. Three short annexes complete the report: Annex 1 provides a descriptive background; Annex 2 provides statistical tables, and Annex 3 lists references consulted in the preparation of this report.

URBAN POLICY IN PERU

SUMMARY

I. Background

1. In recent decades rapid urbanization in Peru has been dominated by the growth of Lima and is reflected in strong demographic growth on the Coast and stagnation in the Sierra (highlands). The main forces in this process have been rural outmigration from the Sierra and polarization of population within the urban hierarchy toward metropolitan Lima. Urban growth rates will moderate in the future, as rural-urban migration slackens but not enough to prevent a more than doubling of Lima's urban population by the year 2000. The pattern of urbanization is likely to be more dispersed, with relatively rapid growth in the cities of the Selva (Amazon lowlands) and one or two key urban centers in the Sierra as well as in some of the coastal cities.

2. The departments 1/ of Peru define administrative rather than economic regions, and vary widely in size and economic structure (varying from Lima's 52.4% share in output to Madre de Dios's 0.1% share). The "natural regions" (Coast, Sierra and Selva), on the other hand, are too large to be regional planning units. The Coast dominates national manufacturing activity but also has a strong irrigated agricultural sector. The Sierra's economy is based on low-productivity subsistence agriculture and on mining. Unfortunately, mining generates few jobs. The Selva is a typical frontier region, sparsely populated but with unexploited potential in petroleum and in agriculture. Regional per capita income differentials are wide, especially between the rural Sierra and Lima. Nevertheless, public investment has not been used to narrow the income gaps. Public investment per capita in the Sierra is less than one-half of the level on the Coast and less than 30% of that in the Selva. Despite the perceived Urban bias in public investment, the evidence suggests that it is more accurate to say that public investments have discriminated in favor of the two non-Sierra macro-regions as a whole, with substantial infrastructure investment in petroleum and road building in the Selva region and in irrigation projects in the Costa Region.

II. Urban Sector Policy

A. Political Constraints

3. Many of the recommendations in this report tend to emphasize policy decisions more than new large-scale public investment programs due to resource constraints on the latter and the importance of the former. Some of the

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1/ Administrative units.

decisions could be politically unpopular, and their benefits may not necessarily be reaped immediately or, even in the near future. Eliminating or reducing consumer and producer subsidies favoring Lima (in utilities, gasoline, food, manufacturing, 1/ etc.) are examples of the decisions facing the government. The political constraints on action, though always present, are probably less severe now than they will be in the future. Therefore, the government has to weigh the opportunities offered by its current popularity against the electoral and public opinion consequences of tough decisions, where the costs are felt sooner than the benefits.

B. Macroeconomic Constraints

4. Although the economy has recovered since implementation of the Economic Recovery Program after mid-1978, the macro-economic constraints on a significant expansion of public investment remain binding. The large size of the defense budget and the rapidly growing service burden on foreign debt leave little scope for maneuver. Any attempt to increase urban public investment substantially should wait until the economic recovery and the revival in private investment have been consolidated. Of the many recent changes in management of the economy, the trade liberalization policy is potentially the most important for urban and regional development. It could lead to growth rate differentials in favor of some peripheral areas compared with Lima if the anticipated shift from import-substitution manufacturing to export promotion takes place smoothly. However, such a shift can take place only slowly and requires continuity in policy objectives and strategy, implementation of complementary policy and investment measures by the government (some of which are constrained by insufficiency of the public investment resources), and maintenance of a booming economy with substantial geographical and intersectoral investment transfers.

C. Selective Public Investments

5. The need for selectivity in public investments is magnified by the present public revenue constraints in Peru. This requires an investment strategy which treats the public sector as "investor of last resort" with an emphasis on the adoption of measures required to stimulate investment by the informal and private sectors (hence e.g. a division of labor where the government provides infrastructure while the private and informal sectors supply housing construction); a strong preference for small-scale cost-effective projects rather than very large projects to spread benefits and risks; more focus on maintaining and managing existing capital stock through maintenance and upgrading expenditure (supplementary investments) rather than expanding capital stock rapidly through expenditure on major new projects;

1/ Via e.g. tariff protection.

priority to equity-oriented and labor-intensive public investment projects; and recognition that institutional and policy innovation (for example, in reducing building standards, changing credit allocations and beneficiary targeting procedures, etc.) may in many circumstances have a greater impact than large-scale investment programs.

D. Resource Generation and Cost Recovery

6. New public investment resources will have to be generated if the goals of urban policy are to be realized. A stronger revival of the economy, a radical reform of the tax system (including the elimination or reduction of central government subsidies, especially those favoring Lima) and the development of new sources of local and regional government revenue would go a long way toward achieving this goal. The other critical step is to improve pricing policies, for example to price public infrastructure and service projects so as to recover capital costs including the market value of land in public investments. Recovering capital costs could have many favorable sideeffects, as in the case of the water supply sector, such as dampening excess consumption, permitting a more rapid extension of the service and (somewhat paradoxically) promoting equity (see para. 2.13). In addition, incorporating the market value of land in cost recovery measures could have the effect of increasing densities, as well as generating resources for future public investments in the shelter and services sector.

E. Priority to the Poor

7. The urban poor suffered a major decline in real income after 1973 as a result of the failures of redistributive policies and after 1976 because of the economic recession. Current measures to revive the economy, to improve its stability, to stimulate labor-intensive technologies and industries, and to aid small-scale industries could benefit the poor substantially. However, it is critical that policies for the urban sector be specifically designed to reach target low-income groups. In addition, urban and regional policies (i.e. spatial policies) should not be treated as substitutes for direct action to redistribute income and wealth, since the main beneficiaries of general policies to improve "spatial equity" are frequently not the poor but industrialists and urban landowners.

F. Agricultural Development and Urbanization

8. Urban growth due to rural to urban migration is unlikely to be affected substantially by agricultural development in rural areas. Agriculture is a priority sector for several reasons: the increasing dependence on food imports, the great scope for raising productivity, and the poverty of the rural population, especially in the Sierra. However, it would be unrealistic to expect successful agricultural development policies to be associated

with rapid rural population growth; on the contrary, output and productivity goals are easier to achieve with a smaller rather than a larger rural population. Rural-urban migration will continue and will generally be beneficial to both the migrants and the rural population left behind. The former can benefit from better urban services and higher income urban job opportunities, whereas the latter can benefit from the increased productivity of the remaining workers and a reduction in the pressure on scarce rural services. The rural population is not expected to change much in size over the next twenty years, but the urban population will at least double. As a result, absorptive capacity problems with respect to public services, jobs and housing will be more severe in the cities than in the rural areas. Agricultural development is important in sectoral terms but is likely to have at best a modest impact in terms of reducing rural to urban migration. Thus, an urban development strategy is more important both in terms of its welfare impact and its effect on the spatial distribution of the population.

C. The Efficiency of Population Control Policies

9. In contrast to agricultural development policies, population control policies are likely to have a greater impact on reducing urban population growth rates. Peru's population is growing at 2.7% per annum. This rate will not decline before 1990, unless fertility falls faster than it has since its peak in the mid-1960s. The current growth rate of population is too high, given the country's shortage of agricultural land, narrow resource base, labor absorption problems and severe urban infrastructure and public service lags. The government has been reluctant to implement a population control policy in the past, and the issue remains sensitive. Nevertheless, a nation-wide family planning program is the highest-return public investment opportunity at the government's disposal. It is the key to reducing urban population growth rates to more manageable levels.

III. Specific Issues to be Addressed in a National Urban Development Strategy

A. Urbanization and the Primacy of Lima

10. Rural-urban migration has resulted in a higher degree of labor utilization, a greater productivity of capital, a decline in fertility rates, lower unit costs of providing public services, higher rural per capita incomes and closer integration of rural areas in society as a whole. Lima's primacy, presently conceived as a "problem," is the natural consequence of long-term historical trends accentuated after the 1940s by the import-substitution industrialization strategy, the relative stagnation of agriculture, the growth in the size of government and its centralization in Lima, and the implicit spatial impacts of macro- and sectoral policies. Among the latter high import tariffs and prohibitions, overvaluation of the sol, subsidized utility rates, free urban lots, subsidized mortgages, cheap gasoline

and subsidized food prices have all favored the growth of Lima. Nevertheless, not only have the net private returns to migrants going to Lima been positive (higher incomes, lower underemployment, greater accessibility to public services, rapid assimilation and upward mobility), but the social returns may well have been positive too. In fact, Lima continues to be the most efficient location for industry and congestion problems are less severe than in many other world cities in the same size class. Hence, the argument that the growth of Lima is a "problem" requires drastic qualification.

B. Managing Lima's Growth

11. Despite these arguments, the government's objective of slowing down Lima's growth rate through a reallocation of public investments may be justified for three reasons: (i) there is a need to promote longer-term economic development in other parts of the country; (ii) it is desirable to anticipate urban diseconomies (such as congestion and pollution problems) before they become unmanageable; and (iii) because there is a social consensus supporting a deceleration in Lima's growth rate. However, the following considerations should be kept in mind: (a) Lima should still continue to grow, even if at a slower rate than in the past, as long as the net social returns to this growth are positive. In fact, the inherent accumulated advantages of Lima are such that even strong policies and initiatives to decentralize economic activity will not avoid a more than doubling of Lima's population by the end of the century. This expected growth, coupled with the existing backlog of unsatisfied demand for urban services will generate the need for continued investments in Lima, particularly to expand and upgrade infrastructure and services for the poor. The expected growth will also make it almost impossible to preserve the agricultural land within and adjacent to the metropolitan boundaries (see para. 23). (b) The past growth rates for Lima were reinforced by macro- and sectoral policies. Abandoning these policies may impose political costs on the government and economic costs on Lima residents, even though the reallocation of a given amount of public expenditure from Lima to secondary cities will likely have a greater positive impact on the latter than a negative impact on the former (para. 3.11). (c) Lima's problem is less a consequence of its current population size or growth rate per se, and more a consequence of the strains that the growth rate puts on scarce financial and management resources required to deal with the complexities of managing a large metropolis and of reorganizing its spatial structure to accommodate continued growth.

12. The issue of strengthening urban planning and management in Lima is complex and not addressed in this report (see para. 30). On the other hand all the proposed alternatives for the spatial structure of Lima are easier to analyze (even though some will be difficult to implement). The three main options are: low-density peripheral expansion with some infilling; promotion of much higher densities within the existing urban boundaries; and planning a polycentric metropolitan region. These alternatives are not mutually exclusive nor incompatible, however, the first is the most likely outcome; the second would be costly since it would require large-scale urban renewal and is, in

any event, infeasible as an exclusive alternative because it is impossible to prevent invasions, or further growth at the fringe, and the third option would require a strong degree of planning, to ensure that peripheral expansion does not preempt the development of polycentric nodes which might be appropriate for a strategy to "decongest" the metropolitan region.

13. The proposal to decongest the metropolitan region by developing a "transversal pattern" of development linking Lima with the larger nearby centers of the Sierra is idealistic. The resulting regional urban hierarchy would be artificial, the topographical barriers would make the interurban communications network very expensive, and priority to Huancayo in such a scheme is justified in terms of a central Sierra strategy more than a metropolitan region strategy.

14. The alternative of the promotion of a coastal "decongestion corridor" involves an axis which is almost certainly too long for effective spatial integration as a decongested metropolitan region. If the strategy succeeded it could accelerate migration to the central coastal region, resulting in an absolutely larger coastal region population rather than a more dispersed metropolitan population of the same size as would be obtained in the absence of such a strategy. The plan could go wrong, especially from the point of view of diverting migrants away from Lima, if the "decongestion"(in reality, more like "decentralization") satellites failed to attract a sufficient volume of industrial activity. In this case, the infrastructure costs could be very high and there is also a danger that implementation of this strategy would be at the expense of infrastructure investments in the intermediate cities or the smaller urban centers in rural areas, rather than a result of diverting investments from Lima-Callao. This suggests the need for extreme caution in pursuing a coastal axis strategy at present. It would be best to proceed <u>either</u> in the north <u>or</u> in the south and only by promoting development in the urban centers <u>with recognized econmic potential</u>.

C. Developing Secondary Cities

15. Between 1961 and 1972 most of the larger secondary cities in Peru grew faster than Lima. Their growth rates may have slowed down in the last decade relative to Lima. However, this slowdown in the pace of economic decentralization may be only a temporary by-product of the implicit spatial policies pursued by the military government and the effects of the severe economic recession.

16. In order to promote economic activity in secondary cities there must be: a revival in private industrial investment; a strong location of industry policy (which cannot be introduced until private investment has recovered); an improvement in agricultural organization and productivity to permit an expansion of agro-based industries; a modification of the macro- and sectoral (or implicit spatial) policies favoring Lima; additional resources for social and industrial infrastructure investment in secondary cities; a strengthening of the interurban telecommunications and transportation networks; and an appropriate degree of regional decentralization in administrative structures and in economic decision-making (e.g., in the banks).

17. Firm recommendations for a viable secondary cities development strategy require more information on the comparative economic potential of different areas of the country and on the comparative returns to infrastructure development in different cities. In the absence of detailed information on these key considerations, the suggestions offered here should be treated as preliminary.

18. Although a strategy should deal with all levels of the urban hierarchy (including low-order centers which are important as supply points for public services and as potential off-farm workplaces, and because small-scale public investments--for example, in the Sierra towns--might generate substantial increases in welfare), its main focus is likely to be on the upper tiers of the hierarchy, that is the development of secondary cities. Priority to a small number of cities avoids the dilution of impact, but the extreme case of this approach--a "countermagnet" strategy--is inappropriate in Peru because the second and third cities are too small relative to Lima.

19. A focus on the larger, intermediate cities is justified by economies of scale. Above a certain city size agglomeration economies become significant enough to both affect investors' decisions on the location of economic activity and to induce development further down the urban hierarchy. The alternative approach of initially developing cities at the bottom of the urban hierarchy is less viable as it is dependent on additional organizational and management changes in agriculture, it carries the risk of under-utilized investments if the strategy fails to stem outmigration from the Sierra, and there are doubts that Peru's comparative advantage lies in agriculture.

20. Given the scarcity of public investment resources, there is a strong case for selectivity and staging of public investments and for stressing efficiency criteria initially. This implies promoting in a first phase, a few cities with demonstrated economic successes, preferably in each of the three macro-regions (Costa, Sierra, and Selva) rather than in just one region. 1/ In the short-run, such a strategy may not stimulate interconnected and complementary development of a system of cities, if candidates selected in the three regions have no links with each other and share no characteristics other than economic success on very different economic bases.

21. A longer-term horizon is required for this strategy to combat successfully the strong primacy of Lima. A second phase for subsequent investment might therefore emphasize a broad based development of cities in the coastal axis in the north. However, this might have to wait for more rapid industrial development there, which is probably unlikely until an effective location of industry policy is introduced and agricultural organization is improved. A third phase might include the promotion of other cities in the urban hierarchy.

1/ Another proposal discussed in para. 3.34, focuses on the development of cities in one macro-region at a time. For example, one suggestion is to promote Sierra towns rather than coastal cities as regional capitals. This could be inefficient and costly because of difficulties in developing adequate telecommunications and air routes.

22. In view of the large number of sizable urban centers, the scarcity of mobile industry and uncertainty about the short-term economic potential of some of the secondary cities, the phasing of a national urban development strategy is critical. It should begin with promoting a very small number of cities, extending its scope to other cities only as public investment and human resources become available and regional policy instruments are strengthened. The specific cities included in this phased approach could be revised as the information from a proposed study (para. 4.5-4.9) on comparative infrastructure costs and economic potential assessment change the ranking of individual cities. The inclusion of more cities in the longer run increases the political acceptability of the strategy. However, the need for selectivity and phasing remain. It should also be recognized that whatever strategy is adopted it will make only a marginal contribution to slowing down Lima's growth rate, except in the long run. Hence, nationalizing and managing the spatial and economic growth of Lima will still be necessary in the near future.

D. Urban Land Policy

23. Although transitional problems remain, the ownership of major undeveloped land areas by the State in some coastal and Selva cities seems to have reduced major speculation in the urban land market in many cities. Nevertheless, it remains difficult for governments to control the pattern of urban development in other cities with little state-owned land, particularly in the Sierra, and in all cities because of weak zoning powers and the inability to prevent organized invasions. It would be desirable to recognize this and attempt to guide the direction, location and density of urban development through a more extensive policy of supplying lots within a framework that would facilitate the eventual provision of infrastructure services and by measures to accelerate the legalization of tenure. This would help to direct invasions to the most appropriate sites and would give the government more leverage in determining densities, standards and areas for future community facilities. On the other hand, urban land in the form of lots should not be supplied free or at prices substantially below its market value, since this stimulates urbanization, inefficient land use and misses the opportunity of increasing public investment resources. It is believed that households will prefer to pay for government lots if ensured early water and electricity connections. Although the general policy of preserving agricultural land is sensible given its scarcity in Peru, specific cases of rural-urban land conversion may be justified in terms of the social opportunity costs of agricultural land.

24. The short- and long-term benefits of an urban land policy cannot be overemphasized in a national urban development strategy.

E. Shelter and Basic Services

25. To deal with the problems of a large and growing urban housing deficit, a severe lag in the provision of basic services behind population growth, and hopefully transient difficulties in housing finance, the following recommendations are suggested:

(a) The government should withdraw from direct public housing construction (especially middle-income urban housing, see recommendation (f) below) and give even more emphasis to the provision of basic services for all income levels. To reach the maximum number of households as fast as possible, service standards should be relaxed; for example, "minimum" lot size and street widths should be further reduced and water supply provision should emphasize low-cost strategies for serving unserved areas.

(b) More attention should be given to low-cost strategies for improving conditions in the center city slums, for example, by taking action to reduce high density and provide basic services (rather than by demolition).

(c) The rent control decree of September 1977 should be drastically modified so as to provide an appropriate atmosphere for encouraging investment in middle-class rental housing.

(d) The housing finance sector should eventually be treated in the same way as other sectors in the money and capital markets are currently being treated under the new economic policies. This implies allowing rates paid to depositors to rise to market levels to ensure that the mortgage market attracts more private savings. Moreover, mortgage repayments should perhaps be indexed to prevent further decapitalization of mortgage institutions (see para. 3.55). 1/ These steps should prevent a continued drain of government revenues into subsidies for the housing finance sector.

(e) To offset the implications of the latter recommendations on mortgage costs, innovations in housing finance that alter the distribution of payments over the loan period should be examined and more research should be undertaken into methods of reducing urbanization costs and housing standards.

(f) The pilot improvement credit scheme for low-income groups should be extended once its implementation and organizational problems are resolved.

(g) Identification of future residential growth areas in the main cities and appropriate land, infrastructure, and credit policies to guide development are necessary complements of active, but in part indirect, public policies to facilitate the provision of shelter and services.

1/ There are many indexing alternatives. One is to index mortgage payments to changes in the wage index. This would imply no change in the proportion of mortgage repayments to wage income, a policy that is difficult to challenge on grounds of hardship (see para. 3.55).

(h) The government should respond to the housing needs of the middle classes by measures (such as incentives for producers and credit availability for consumers) to stimulate the private sector to supply both owner-occupied and rental housing. The government should also continue to provide infrastructure services directly for middle-income housing developments or adopt measures to facilitate the provision of "urbanized" land for middle income housing by private developers.

F. Urban Transport

26. Lima's traffic congestion problems seem relatively moderate compared with other cities of similar size in less developed countries, but they could deteriorate rapidly if automobile ownership continues to accelerate and steps are not taken to rationalize traffic and public transport. Commuting is difficult because of inadequate or irregular transit services, especially for low-income workers living on the periphery of the city but working elsewhere.

27. Construction of a metro does not seem to be a cost-effective remedy for these problems. Metro studies often overestimate ridership levels and energy savings and underestimate capital costs. Moreover, the low-density spatial structure of Lima makes it unlikely that traffic would be heavy enough for a metro even along specific well-traveled corridors. In any event, this traffic could in all likelihood be carried at much lower cost by other modes.

28. There are three major components in a viable metropolitan transport strategy for Lima:

(a) Measures to dampen the growth in the use of private cars. Adjusting the current price of gasoline to world levels would also promote energy conservation, eliminate an implicit spatial bias favoring Lima and improve the distribution of real consumption levels. It would also add to the growth in public revenues, as would imposition of some kind of tax (or an increase in the excise tax on automobile ownership).

(b) Implementation of traffic management policies to improve the flow of traffic (e.g., bus-only lanes, more one-way streets, automatic syncronized street signals, stronger parking controls, coupled with minor supplementary physical investments in road alignment and widening).

(c) Development of an efficient and comprehensive metropolitan bus system. Existing bus and microbus operators and taxis could continue in business as supplementary modes. This proposal is not easy to implement because it would involve both substantial capital investment and institutional innovations. 1/

1/ Several alternatives will be analyzed in the course of the proposed Urban Transport project currently under study.

G. Regional (Administrative) Decentralization

29. The future permanent institutional framework for the administrative decentralization mandated by the 1979 Constitution is still unclear and under discussion. Decentralization will be ineffective unless the new local (or departmental) bodies are given a substantial degree of fiscal autonomy including their own revenue sources. In deciding the appropriate degree of decentralization, the gains of increased political participation and possibly improved efficiency in selection and coordination of projects have to be weighed against the danger of "fair share" allocations to all departments which would abort any attempt to implement a locationally discriminatory and phased national urban and regional development strategy. Since the main rationale for introducing a proposed small number of macro-regions is to facilitate technical planning (which could be achieved without a new formal political structure), the government should be cautious about introducing a higher subnational level of government than the department.

H. Other Issues

30. The scope of this report is necessarily selective. Some complex issues are not discussed because they should be studied in more detail rather than treated superficially here. Among the most important is the quality of urban administration and management. Resolution of the management issue depends on: (i) a clarification of institutional roles and responsibilities; and (ii) a strengthening of the capacity of subnational institutions to carry out their mandates by increasing their fiscal autonomy (matching revenue authority with expenditure responsibilities) and overcoming key constraints in the supply of technical and professional manpower. A study to address these issues is suggested in para. 4.4. Other issues not discussed in this report include environmental quality, health, education and other urban social services, although most of the principles discussed in Section II apply to all aspects of public service provision in urban areas.

IV. Conclusions

A. The Timing of Actions and Investment Programs

31. The current insufficiency of financial and, more importantly, management resources, suggests that for the near future there will be a severe constraint on the size and rate of expansion of the public investment program. In general, the policy framework should give priority to managing and administering the existing capital stock rather than focussing on the expansion of capital stock in new areas. It must also distinguish between policy actions and investment programs and their timing. The issue of timing is important because the immediate scope for policy actions is greater than for large-scale investment programs and some policy decisions with short-term or medium-term impacts will have to be taken. In fact, a few of these will more likely influence the context of a viable urban development strategy (such as the general recovery of the economy) rather than become components of the

urban development strategy itself. In addition, many of the major policy actions and investment programs designed to affect the long-term future will be based on decisions taken within the lifetime of the present government. There is therefore a need to adopt a systematic framework for formulating a selective and phased national urban development strategy soon, based in part on the findings of this report.

32. To improve the information base for delineating, or revising, initial policy and investment decisions a number of studies are proposed. The scope, timing, cost and review procedures for these studies will be firmed up following discussions of this report.

B. Study Proposals

(a) Urban Management and Finance

33. This study would review the existing and potential roles and responsibilities of national and subnational institutions and the fiscal and human resource constraints on their capacity to manage and finance urban development. The study would clarify the objectives and roles of various organizations and suggest ways of overcoming identified operational constraints. A section of the report would focus specifically on the potential for strengthening metropolitan management in Lima (para. 4.4).

(b) Economic Structure and Development Potential in Secondary Cities

34. This study would focus on the economic structure and comparative advantage of a selected set of secondary cities in the three macro-regions, including cities in the areas of potential deconcentration north and south of Lima. It would assess investment opportunities in various sectors and their job-creating potential, as well as the relative returns to expanding infrastructure services in various locations (paras. 4.5-4.9).

(c) Supplying Urban Shelter and Services

35. A set of four specific, focussed studies may be required. The first would review the current delivery system to determine an appropriate role for selective public sector interventions. The second would review housing finance to determine the feasibility of implementing new approaches to housing finance in Peru. The third would investigate the possibilities for reducing housing costs by reducing present standards in new areas and concentrating on upgrading rather than renewal in central areas. The fourth would investigate the possibilities of streamlining the acquisition and formalization of land rights to facilitate the public sector's ability to rationalize the spatial development pattern and lower the costs of urbanizing land (paras. 4.10-4.13).

I. URBAN AND REGIONAL DEVELOPMENT

Background

1.1 The main features of urban and regional development trends in Peru may be summarized in a few statements: 1/

1.2 Urbanization has increased rapidly over the last forty years in association with industrialization, modernization and higher rates of economic growth. In general, the spatial distribution of the population has, hitherto, followed rather than led the spatial distribution of jobs and investment. Hence, the process has been dominated by the growth of Lima which now accounts for more than two-fifths of the urban population which is in turn more than three-fifths of the national population. However, other million-plus urban systems are developing in addition to Lima (Trujillo-Chimbote, Chiclayo, Arequipa, Huancayo and Cuzco), and these could provide the demand thresholds to justify the establishment of scale-economy industries to serve local markets.

1.3 Rural-urban migration has been the main force fueling urban growth, though the faster decline in mortality rates in the cities has made a more than negligible contribution. Net flows have been dominated by outmigration from the rural Sierra (highlands) to the urban coast, especially, but not exclusively, to Lima, where economic growth has been the most rapid. Within the Coast, Lima pulls in migrants from other cities, but their losses have in many cases been more than offset by in-migration from the Sierra. Net in-migration is occurring in the Selva (Amazon low lands) in response to expanding economic opportunities, but the numbers involved remain small. Although there is net out-migration from rural areas, some rural areas have been experiencing an inflow of population, suggesting some population redistribution toward rural areas with high economic potential.

1.4 Rural-urban migration rates are expected to contribute less in absolute terms to urban growth rates in the future, as the urban population base is now substantially larger than in the past. Despite this anticipated reduction in the rate of growth, the urban population will more than double in the next two decades creating serious absorption problems in terms of jobs and public services. The pattern of urbanization will be somewhat more dispersed than in the past, with vigorous growth in the cities of the Selva and in Huancayo, the main city of the Central Sierra. However, the dominance of metropolitan Lima in the national urban hierarchy will be affected only slightly.

1.5 Examination of inter-Department data reveals wide differences in population size, degree of urbanization, levels of public services and economic structure (Annex 2, Tables 9-11). Many of the 23 Departments 2/ have

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1/ The comments here are summaries of the arguments in Annex 1, which rely on the data displayed in the Annex 2 Tables.

2/ Callao has special status as a Constitutional Province.

highly specialized, economic bases, e.g., in mining or in agriculture. The Department of Lima dominates national output in urban-related sectors such as commerce, financial and business services, transportation and utilities. It accounts for more than one-half of national output in all sectors except for agriculture, fishing, mining and construction. No other Department accounts for more than 5% of national output. Output per capita is higher in Lima than elsewhere, with the sole exception of Tacna which is specialized in the high-productivity mining sector.

1.6 The natural regions of Peru (the Coast, the Sierra or highlands, and the Selva or Amazon Lowlands) are different in almost all respects (economic structure, climate, topography, social structure, etc.). The Coast is dominant in industry, though it also has a relatively prosperous irrigated agriculture. Subsistence agriculture, characterized by extremely low productivity, is the main activity of the Sierra. There is also a large mining sector, but it generates relatively few jobs. The Selva has considerable unexploited economic potential in commercial agriculture (e.g., coffee, fruits) in the Ceja de Selva (high jungle) and in petroleum, but it has not yet absorbed a significant proportion of the national labor force.

1.7 A substantial proportion of Peru's population (28% in 1971) lives in conditions of absolute poverty (Annex 2, Table 16), but the regional differentials are very wide even after correcting for regional cost-of-living variations. Although there is a serious problem of urban poverty both in Lima and in other cities, the rural population of the Sierra are by far the worst off with average incomes only a third of the level in the coastal cities (and only a fifth of the level in Lima).

1.8 In spite of the severe poverty of the Sierra, the region has received only a small share of public investment, particularly in agriculture (its major economic activity) and in the social sectors that impact most directly on welfare. However, this does not in itself support the hypothesis of a pro-Lima or pro-urban bias in public investment since disproportionate shares of public investment have been allocated to the development and distribution of natural resources in the Selva (petroleum and transportation) and to coastal agriculture.

1.9 Analysis of urban socioeconomic indicators (Annex 2, Table 19) suggest that Arequipa, Ica, Puno and Cuzco enjoy some of the social characteristics favorable to secondary city growth, such as an educated labor force and social infrastructure. Other large cities (e.g., Trujillo, Chiclayo, Chimbote and Piura) are less well endowed, while the rapidly growing cities of the Selva are severely deprived of social infrastructure. On the other hand, industrial value added per employee is much higher in some of the secondary cities (e.g., Chiclayo, Chimbote) than in Lima. Obviously, assigning priority to any of these secondary cities in the design of a national urban development strategy would require a detailed assessment of their economic potential (see paras 4.5-4.9).

II. URBAN SECTOR POLICY CONTEXT AND GUIDELINES

2.1 This section discusses briefly political and macro-economic constraints that must be taken into account in the formulation of an urban sector policy, followed by an attempt to develop some general objectives and approaches that can be applied to the specific policy issues discussed in Section III. The essential points developed here are as follows:

(a) many of the priorities for urban policy involve actions (e.g., clarifying and mandating the role and responsibilities of different levels of government, adoption of cost recovery measures for publicly funded projects, reducing or eliminating subsidies, etc.) rather than large-scale investment programs. Nevertheless, many of these actions require tough and unpopular political decisions that will reap benefits only in the longer run;

(b) the recovery of the economy is the highest priority and there are severe macroeconomic constraints on large-scale public investment in the urban sector in the short run;

(c) a selective public investment strategy which spreads available resources over many small projects would be cost-effective even when the public resource constraints become less binding;

(d) in the medium term, the problems of resource generation and cost recovery must be effectively resolved if the backlog in public service provision is to be eliminated. The importance of resource generation and cost recovery is magnified by the fact that the urban population will more than double over the next twenty years;

(e) the principle of cost recovery does not necessarily conflict with priority to the poor if the substitution of public for private provision (e.g., water and light) results in lower expenditures for poorer households;

(f) continued urbanization, i.e., rise in the share of national population living in urban areas, is consistent with income and welfare improvement for both urban and rural dwellers;

(g) on the other hand, the savings in future urban public investments from successful implementation of a national population control policy in the context of a slower growth rate of jobs relative to population are so large that they justify attention to this sensitive issue, even though adoption and implementation of this policy will not affect dramatically the growth of the labor force in the next two decades.

A. Political Constraints

2.2 There is no such thing as a strictly technical policy decision. All policy decisions are in the end political. The recommendations contained in this report are technical in the sense that they are based on professional judgment that they will have favorable consequences from the point of view of achieving particular policy objectives. However, the decision whether or not to adopt any one of them cannot be divorced from its political costs and benefits. As the first democratically elected government in many years, the present government has advantages and disadvantages with respect to major policy decisions. The advantage is that it has a high degree of political capital. This means that tougher policies should be, at least initially, more acceptable. The disadvantage is that it must be more responsive to the electoral consequences of the actions it takes. Many of the policy proposals suggested in this report share the characteristic that they may be more unpopular in the short run but reap benefits in the longer run (perhaps in some cases beyond the five-year maximum life of the present government). Other policy changes have distributional impacts: they benefit some groups and harm others. For example, the elimination of food subsidies would be a boon to the rural population but damaging to urban residents. Balancing these effects is not merely a matter of numbers, since different groups in society exercise different degrees of political power. Some of the proposals in this report favor the rural areas relative to the cities; others favor the smaller cities relative to Lima. These differential spatial impacts, especially as a result of policies designed to slow down the rate of growth of Lima, incur potential political risks, not only because Lima accounts for about one-quarter of the national population but particularly because its political weight exceeds its population weight. 1/ The strongest political pressure groups are concentrated in Lima and their greater access to information increases their political effectiveness.

2.3 These points are emphasized merely to show awareness of the political constraints on urban and regional policies. The implications of these constraints for the government are fairly obvious. First, accepting the proposition that the present government has a substantial stock of political capital that may be eroded by unpopular policies, the government should be clear about its own priorities in choosing among alternative politically risky actions noted above. If the necessity of tough decisions is accepted, the political constraints are probably less severe now than they will be in two or three years time. Second, where policies incur short-run unfavorable reactions, the government should take care to explain their long-term benefits. Finally, if the government is unwilling to take the hard political decisions needed to achieve specific policy objectives, such as to eliminate the implicit spatial policies that encourage the faster growth of Lima, it should accept that the policy objectives are unlikely to be reached and cease to pay lip service to them. This is especially important with respect to the goal of slowing down

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1/ Before the introduction of universal suffrage the right to vote involved a literacy test, as a result Lima's potential political influence was even greater because of its more educated population.

the growth rate of Lima since it is unlikely that this will be achieved by explicit spatial policies alone. As pointed out in paras 3.6 and 3.10 it is not self-evident that the slowing down of Lima's growth is desirable. If this objective were to be pursued within reasonable bounds, it is clear that the most powerful policy actions would include the elimination of consumer and producer subsidies (gasoline, utilities, food, tariff protection, etc.) to shift relative prices against Lima. Such actions are unlikely to be popular in Lima itself. There is no way of avoiding the trade-off between short-run political popularity and attaining this stated policy goal.

B. Macroeconomic Constraints

2.4 The economy has recovered slowly since mid-1978 and now appears to be under control, with the notable exception of the high inflation rate. 1/ The balance of payments is now in surplus (as a result of a strong export performance, especially for petroleum), and currency reserves are being built up. Moreover, the economy grew by 3.5% (real GDP) in 1979 and somewhat faster in 1980. Nevertheless, macroeconomic constraints on expansion in public investment remain severe. A major problem has been the sharply rising proportion of Central Government current expenditures being absorbed by interest payments on public debt: 28% in 1979 compared to 12% before 1972. 2/ Combined with a substantial defense budget, this burden has severely restricted government spending on economic and social development. The recovery has not been strong enough and the external debt rescheduling is too recent for the government to fill the gap by resuming foreign borrowing on a large scale. The constraints on public investment expansion have not been offset by an expansion in private investment. Gross private investment remains only about 8-9% of GNP. Domestic industry has high production costs, and agricultural output per capita stagnated throughout the 1970s. The growth in employment has lagged behind the growth in labor supply, aggravated by a capital-biased incentive structure. Attempts to improve the distribution of income in the 1970s were swamped by the impact of the 1977-79 recession on the poor.

2.5 The dominant concern of the government should be to consolidate the recovery and stimulate the revival of private investment. Only when these objectives have been achieved will it make sense to initiate new large-scale public investment, whether in the urban sector or in other sectors. However, some major policy changes have been introduced which could facilitate attainment of urban and regional policy goals in the medium- and long term. The most notable example is trade liberalization. Import prohibitions of manufactured goods competing with domestic production have been replaced by a 60%

1/ The consumer price index for Lima increased by 68% in 1978-79 and by 53% June 1979-June 1980, Boletin del Blanco Central de Reserva del Peru (July 1980), p. 28.

2/ Public sector current expenditure is about six times larger than capital expenditure.

maximum tariff. The previous government also introduced an export promotion program, the key instrument being a tax credit certificate (CERTEX), which is expensive but has been successful, in combination with a policy of gradual but continuous depreciation of the currency, in stimulating non-traditional exports. This shift in trade policy emphasis from import substitution to export promotion offers good prospects for bringing about a faster growth in economic activity in some peripheral areas of the country rather than in Lima itself, since most of the key export industries are in the mining and natural resource sectors 1/ which are located predominantly outside Lima and the metropolitan region, and most of the domestic manufacturing firms that were so heavily protected in the 1970s are located in Lima. This is a relatively rare example of a change in macro- and sectoral policies that may bias development in favor of locations outside Lima.

2.6 Nevertheless, a shift in the relative rates of regional development cannot occur overnight. Much depends on the consistency with which these policies are implemented over a long period of time. There is also a need for complementary policies to ensure that export potential is realized, and some of these complementary measures are bound by the macroeconomic constraint on public investment (for example, transportation investments in roads linking agricultural and resource regions with transportation nodes, or in a Northern ocean port). Even more difficult is the fact that the shift requires major structural change in the economy, namely the transfer of resources--especially capital--from uncompetitive import-substitution industries to the potential export industries. These transfers will not take place easily, particularly since they involve geographical as well as intersectoral shifts. Success requires confidence in the stability of the economy, conditions of relative boom and belief in the continuity of policies. Even if these conditions are satisfied, the process will occur only slowly, taking many years. The potential benefits are, of course, considerable: further improvement in the balance of payments, a faster rate of economic decentralization out of Lima, a stimulus to the growth of small towns, and a net growth in employment.

C. The Need for a Selective Public Investment Strategy

2.07 As noted in the previous paragraph there are at present severe macroeconomic constraints on an expansion of public investment in the urban sector. Even when these constraints are no longer binding, there is a strong case for more selectivity and cost-effectiveness in the use of scarce public investment resources. Perhaps the most important implication of a selective public investment strategy is a relative emphasis upon institutional, managerial and policy reforms in the urban sector rather than on new large-scale investment projects and programs. There are many examples of this later in the report. Eliminating subsidies to people and industries in Lima may be a stronger instrument for controlling primacy than investing in housing and industrial infrastructure in areas outside Lima. Institutional innovations in

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1/ There are also underexploited export opportunities in agriculture.

housing finance (para. 3.56) may have a much broader impact than the FONAVI subsidized house-building program. A strong location of industry policy (such as a self-financing tax/subsidy scheme) may promote industrial decentralization more than an industrial estates program. Policy innovation and public investment programs are, finally, complementary rather than alternatives, but current public investment constraints in Peru suggest that more attention should be given to the former than to the latter over the next year or two.

2.08 Another implication of a selective public investment strategy is to favor small- rather than large-scale public investment projects (e.g., Majes), except perhaps in the development of natural resources. Such a preference has two potential benefits. First, it is consistent with an equity approach in the sense that it is more likely to result in a spatially more dispersed pattern of public investments sharing benefits around much more than in the case of a large-scale location-bound project. Second, consistent with the portfolio theory of investment, it spreads the risks of miscalculating rates of return over a large number of small projects compared with a few very large projects. A similar implication of a selective investment strategy is to give more emphasis to maintenance investments and to key supplementary investments rather than continuously embarking on new projects; in other words, to maximize the benefits from past public investments. This strategy has obvious applications in the housing and transportation sectors, favoring rehabilitation and upgrading existing investments over urban renewal, and the implementation of minor highway improvements, coupled with traffic management and measures to stimulate better maintenance of buses in preference to building a metro.

2.09 Defining cost-effectiveness in terms of consistency with general societal goals such as employment creation will affect the way public investment priorities are determined. For example, an emphasis on low-cost indigenous labor-intensive projects would give preference to building rural roads and self-help housing using labor-intensive technologies, inviting direct community participation (in the form of volunteer labor) in infrastructure development in the pueblos jovenes, or developing industrial estates for small-scale workshops rather than to large-scale modern industrial plants.

2.10 In addition, being selective in public investments is not inconsistent with redirecting them so that the welfare impacts of growth oriented investments are maximized. The need for the latter is presented in more detail in part E. Such a strategy would involve many aspects. For example, treating the government as the "investor of last resort" that steps in only where the private or informal sectors are absent is more consistent with the principles of the current than the previous government. In the urban sector, a specific implication is more attention to basic urban infrastructure and public services (where there are supply indivisibilities) and upgrading of downtown rental units, and less emphasis on direct housing construction itself, particularly new public housing, since private developers can respond to high-income housing demand while self-help and the use of informal builders can meet the shelter needs of the low-income groups if the supply of materials

can be ensured. The unsatisfied middle-income housing demand highlights the importance of the government taking action to stimulate and regulate private investment in this sector rather than undertaking a direct development role. In general, measures to stimulate the involvement of the private and informal sectors are preferable to direct participation by the public sector.

D. Resource Generation and Cost Recovery

2.11 The opportunities for a large-scale urban investment program, such as a metro for Lima, are quite limited now and will be in the near future. The size of the existing foreign debt currently restricts severely the scope for further borrowing for such projects. In addition, the economy (and government revenues) have not yet fully recovered from the deep post-1977 recession, while the high inflation rate and tight money policies inhibit a substantial expansion in government spending. A small number of existing, quite large investment projects (e.g., Majes) also commits a high proportion of the current development budget. These circumstances explain the emphasis in this report on policy and institutional actions rather than an emphasis on new large-scale investment programs.

2.12 Nevertheless, the severe lags in infrastructure and urban service provision highlight the eventual desirability of a more ambitious urban investment program, especially if policy-makers are serious about their goal of promoting the faster development of alternative locations to Lima. This implies that the problem of generating new public investment resources will have to be addressed. If the economy revives additional tax revenues will be generated, and a strong export performance may facilitate a moderate revival in foreign borrowing later. The reform of the tax system lies outside the scope of this report, even though there is potential for improvement: the income elasticity of taxes is very low, the tax burden is not heavy, and tax administration is weak. Moreover, the existing tax system has an unfavorable impact on resource allocation, both subsidizing inefficiencies and inhibiting the adoption of labor-intensive technologies. 1/ Implementation of some of the recommendations of this report, such as eliminating housing finance subsidies and imposing additional taxes on automobile use and consumption, would relieve the strain on government revenues. In addition, investigation into new sources of local revenue (for the municipalities and the proposed regional bodies) is an important research priority (see para. 4.4).

2.13 Another critical step is to improve pricing policies, for example, to price public infrastructure and service projects so as to recover operating and capital costs including the market value of land. This source of revenue is as important as the generation of new fiscal resources. In water supply and sewerage, for example, national investment over the period 1970-78 averaged

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1/ For elaboration of the arguments, see World Bank, Peru: Long-term Development Issues (April 1979), Vol. II, Chapter VII, pp. 260-95.

only US$1.30 per capita, the lowest in Latin America. 1/ A major reason for this inadequate level of investment is, of course, the insufficient recovery of project costs. As a result many parts of most cities remain unserviced, in a context where, as a group, urban consumers are subsidized more than rural consumers. Since the costs of expanding water supplies to Lima will be massive in comparison with past levels of investment, 2/ a rapid shift to marginal cost pricing of water is of critical importance. Such a policy shift will increase the public service costs to serve migrants in Lima compared with elsewhere, given that the marginal costs of supplying new production are higher in Lima than in other cities in Peru. Recovery of project costs, on the other hand, will make it possible to reach households which are not currently served much faster because it relaxes the public investment resource constraint, while the higher tariffs will dampen excessive consumption (e.g., watering the estates of the upper income groups). The counterarguments that water supply is a public service and that raising tariffs would have adverse equity effects are weak because a large proportion of the population, and in general the poorest section, pays much more to private carriers than the full cost of public water. If marginal cost pricing is used as an instrument to expand the scope of the service, it would improve equity rather than the reverse. 3/ Similar arguments apply to other services, such as transportation. Adoption of the principle of cost recovery would require that appropriate market prices for urban land be included in costing government investments in infrastructure and site development, to increase densities and capture a portion of the surplus in land values for future public investments, particulary in the shelter and services sectors.

E. Priority to the Poor

2.14 Peru has one of the most unequal income distributions in the world. Although the first military government gave redistribution a high priority among its policy objectives, the effects of its policies were quite limited. Major changes in ownership were implemented, but they only redistributed income and wealth among the top quartile of the population. For instance, only 15% of rural workers were direct beneficiaries from agrarian reform, while profit-sharing schemes in industry and mining benefited less than 5% of the labor force. Incentive policies (e.g., negative real interest rates, tax

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1/ Pan American Health Organization - World Bank, Peru: Estudio del Sector de Abastecimiento de Agua y Dispocion de Excretas (June 1980), p. 8.

2/ Water supply and sewerage investment requirements in Peru as a whole were estimated at US$1,450 million for the period 1979-90 compared with actual investments of US$168.3 million (at 1978 prices) in the period 1970-78 (Ibid., p. 7 and Annex 5).

3/ There may also be some scope for cross-subsidization. Since the wealthy neighborhoods are geographically concentrated, unit tariffs could be permitted to vary according to the area supplied, or according to levels of consumption.

holidays, payroll taxes) continued to have a capital-intensive bias discouraging use of labor. Tax policies were far from progressive with a heavy reliance on indirect consumption taxes and substantial exemptions from corporate and personal income taxes. Expenditures on education and health fell in real terms. Food subsidies benefited the well-off as much as the poor. There was no attempt to develop a strategy for promoting small-scale industries in the cities that might have aided the urban poor, either directly or indirectly. Although the second military government continued many of these policies, the position of the poor deteriorated because the economic recession and consequent austerity program of the middle and late 1970s affected the low-income groups most severely. 1/

2.15 Given the lack of effectiveness of the equity-oriented 1968-80 governments to bring about redistribution to the lower income groups, the urban poor pose a daunting challenge to the new government. There are several ways through which the government could achieve better results. For instance, reviving the economy and improving the efficiency of resource allocation can be of major benefit to the poor. "Trickling-down" effects from a rapidly growing economy may be substantial, while a more stable economy would avoid the recessions that impact most severely on the poor. Eliminating the price distortions that favor the use of capital and inhibit the use of labor would encourage shifts of resources into industries and technology that are labor-intensive, thereby expanding employment. More could be done to provide credit, marketing skills and technical assistance to the informal sector and to small-scale enterprises.

2.16 However, these measures would not be enough. Urban policies have also to be designed specifically to reach target groups directly. For example, public housing construction is unlikely to ever benefit the very poorest, unless the government could afford massive subsidies and be satisfied with a program that helped only a few. Hence it makes much more sense in the context of scarce resources to include in a selective and phased investment program the provision of basic services (such as low-cost water supply) in unserved low-income areas. Increasing public investment in education, health and nutrition would be helpful, provided that the programs were specifically targeted to the lowest income groups. The question of targeting is critical. There is a great danger in urban and regional policies in using interregional and interurban equity as a substitute for interpersonal equity. Under the pretext of aiding low-income regions or the poorer urban areas, it is easy to implement programs that could benefit industrialists, landowners and merchants in these areas with negligible impacts on the welfare of the very

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1/ The austerity program (e.g., new taxes and higher food prices) led to a marked fall in real wages, while the stabilization program of 1977-79 involved deepening the recession in the short run as the price of restoring control of the economy in the longer run. The official real wage index for metropolitan Lima fell by 41.1%, 1975-79, though nominal wages increased over the same period by 186%. (Ministerio de Trabajo, Anuario Estadistico del Sector Trabajo 1979 (June 1980), Table 27.) Those in the informal sector or who were unemployed suffered even more.

poor. Hence, urban and regional development policies should not be treated as synonymous with income redistribution policies, unless benefits to, say, households with less than median incomes can be demonstrated. For example, it would be wrong to implement a selective investment program within the framework of urban policies designed to slow the rate of population growth in Lima if this involved neglecting the social programs needed to improve the welfare of the large number of Lima's poor.

F. Agricultural Development and Urbanization

2.17 Agricultural development in rural areas as a means of slowing urban growth rates resulting from rural to urban migration is unlikely to be very effective as Peru's agricultural resource base is limited (with only 5% of the land cultivable, and another 17% natural pasture). This is not to suggest that agricultural development is not important and deserving of attention. The sector absorbs more than two-fifths of the labor force, generates almost three-tenths of exports and produces two-fifteenths of GDP. In addition, the present state of agriculture is highly unsatisfactory. Per capita food production declined continuously in the 1970s with the result that the dependence on food imports increased substantially. Conditions vary among regions: relative prosperity in irrigated agriculture on the Coast; unexploited potential in the Selva, especially the Ceja de Selva; and severe poverty and marginal conditions in the Sierra. The Sierra provides a livelihood for 55% of the country's agricultural households, but the land-labor ratio (averaging 1.9 ha. of cropland per family) and productivity are low, and the transport network and market organization are grossly inadequate. The main policy instruments used by the military government to improve agriculture were agrarian reform and strict controls over marketing. In general, the AREs (Agrarian Reform Enterprises] have been far from successful. Rigid size criteria led to diseconomies of scale in the Sierra. Conflicts arose between members interested in maximizing wages and in mechanization and non-members interested in maximizing seasonal employment. Incentives to work were low, and the AREs have been plagued by poor management. To the extent that there were benefits, they accrued to the better-off families, while the 40% of farm families that are minifundistas and the 12% who are landless laborers were unaffected. The marketing controls on production, prices and foreign trade resulted in such inefficiencies that they were subsequently modified and relaxed. These problems are a legacy from the previous government. The present government is giving agriculture the highest priority, and a precondition for future improvement is to resolve some of these inherited problems.

2.18 There is, therefore, no doubt that the agricultural sector is important, that its present condition is unsatisfactory, and that it is a top policy priority. However, the goal of raising productivity and output in agriculture should not be confused with the goal of maintaining the population on the land (i.e. minimizing rural-urban migration) as there is no direct correspondence between the two. On the contrary, although there is some unexploited scope for introducing labor-intensive but high-productivity

techniques in agriculture, raising productivity would be much easier with a smaller than a larger agricultural labor force. Of course, attempts could be made to promote off-farm employment (e.g. small industries) in the rural areas, but this is not easy to achieve and the main problem areas (in the Sierra) are isolated and far from the main markets. Rural-urban migration can be expected to continue since rural fertility rates are higher than urban fertility rates and a successful agricultural development strategy is unlikely to be sufficient to absorb the more rapidly growing "potential" rural labor force.

2.19 Thus, more urbanization in Peru is inevitable and is probably desirable. Rural-urban migration can contribute to continued improvement in the income and welfare of both the migrants and those they leave behind. The migrants can benefit from better paid urban jobs and the availability of urban services, whereas those left behind can benefit from the higher productivity of agricultural labor and a reduction in the rate of increase in the demand for scarce rural welfare services. However, since the urban population is now larger than the rural population, the contribution of rural-urban migration to urban growth rates will be smaller than in the past. Thus, the growth rate of urban population will be reduced, but by how much will depend upon how fast urban fertility rates decline. 1/ Table 2.1 shows rural-urban population distributions under alternative assumptions about the growth rate in total population and about the growth rate of rural population. In the most optimistic case (high rural and low national population growth rates) the urban population will still reach 21.79 million by the year 2000, that is, 73.4% of the total population and 2.87 times larger than the urban population in 1972. In the worst case, it could reach 27 million (more than 84% of the population). These results depend on the assumption that rural population will not grow at a faster rate than in the past, 2/ but this assumption appears reasonable in the light of experience in other developing countries.

2.20 The policy implications of this analysis are clear. Despite the present inadequacy of physical and social infrastructure in rural areas the problem of supplying these services to a more slowly growing rural population is much less severe than that of supplying the more rapidly growing urban population. The rural population over the next twenty years will not be much larger, if at all, than it is today; on the other hand, the urban population will more than double. From this point of view, urban policies are much more critical. In a broader context rural development policies remain the highest priority. But the priorities have much less to do with providing physical

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1/ As suggested below (paras. 2.21, 2.22), a population control strategy would generate high returns. The projections of urban population in Table 1 illustrate how serious the urban absorptive capacity problem will be in the absence of strong measures to reduce fertility.

2/ The range implied by Table 2.1 is that the rural population would fall within an expansion of 12% or a decline of 25%, 1972-2000.

and social services to the rural population per se than with providing those services (e.g., basic health, education and extension services) which can increase the productivity of the agricultural sector and raise the domestic contribution to food supplies. On the other hand, an urban development strategy is more important in terms of its welfare impacts and its effect on the spatial distribution of the population.

Table 2.1: POPULATION PROJECTIONS AND RURAL-URBAN DISTRIBUTIONS

			1972	I	2000	II
Total:	Size			29,685		31,938
	Growth rate		14,273	2.7		2.9
A.	Size	Rural	6,678	7,897		7,897
		Urban	7,595	21,788		24,041
	Distribution:	Rural	46.8	26.6		24.7
		Urban	53.2	73.4		75.5
	Growth rate:	Rural		0.6		0.6
	1972-2000	Urban		3.8		4.2
B.	Size:	Rural	6,678	6,869		6,869
		Urban	7,595	22,816		25,069
	Distribution:	Rural	46.8	23.1		21.5
		Urban	53.2	76.9		78.5
	Growth Rate:	Rural		0.1		0.1
		Urban		4.0		0.4
C.	Size:	Rural	6,678	5,009		5,009
		Urban	7,595	24,676		26,929
	Distribution:	Rural	46.8	16.9		15.7
		Urban	53.2	83.1		84.3
	Growth Rate:	Rural		-1.0		-1.0
		Urban		4.3		4.6

NOTES: National Population Projections:
- I. Assumes acceleration of fertility decline, with total fertility rate declining from 6.33 in 1970-75 to 3.75 in 1995-2000.
- II. Assumes continuation of fall in fertility at same rate as in 1970s.

Rural Population Projections:
- A. Assumes rural growth rate at same rate as the 1961-72 average.
- B. Assumes decline in rural growth rate to 0.1% in 1972-2000.
- C. Assumes that rural population in year 2000 will be 75% of 1972 level.

SOURCE: World Bank, Peru: Long-Term Development Issues (April 1979), Vol. II, Table 38 and Vol. III, Table 1.19.

G. The Efficiency of Population Control Policies

2.21 In contrast to agricultural development policies, population control policies are likely to have a greater impact on reducing urban growth rates. The current 2.7% rate of population growth 1/ in Peru is one of the fastest in Latin America. Birth rates have been falling since the mid-1960s (currently 39.7) 2/ but the impact of modest decline has been offset by a faster fall in mortality rates (from 27.1 per thousand in 1940 to 17.8 in 1960-5 and 12.2% in 1975-80). 3/ If fertility rates continue to decline at the same rate as in recent years, the population growth rate will not begin to decline until after 1990 (this is because of the young age structure), implying a population of 31.94 million in the year 2000. On the other hand, if fertility rates could be rapidly reduced (say by 41% by 1995-2000), the growth rate in population would fall to 1.9% by the period 1995-2000 and the population in the year 2000 would be only 29.69 million. 4/ This latter scenario is inconceivable without a strong government policy to reduce fertility rates.

2.22 The dangers of continued rapid population growth are more serious for Peru than for many other countries, primarily because of the scarcity of resources--especially agricultural resources and the fact that labor absorption remains a serious problem. 5/ Population pressure on the land remains high, and probably only a smaller rural population is consistent with the objective of raising rural incomes significantly. Moreover, the costs of accommodating surplus population in the cities--particularly Lima--are heavy, especially the public infrastructure (e.g. water supply) and social service (e.g., health and education) burden. These considerations suggest that the debate comparing the differential rates of return on investments among macro-regions, among sectors or in Lima versus elsewhere appear trivial in the context of the high potential rate of return from investment in a family planning program. Such investments have now had considerable success in many other countries. A faster deceleration in the rate of population growth will facilitate improvements in agricultural organizations and implementation of a national urban development strategy and will make it much easier to narrow the severe urban infrastructure and public service lag. For a variety of social, cultural and institutional reasons, population control remains a sensitive issue in Peru. But it must be pointed out that a nationwide mass family planning program, has the highest payoff of any public investment option available to Peruvian policymakers.

1/ United Nations Population Division estimate.

2/ UN Population Division estimate for 1978.

3/ World Bank, Peru: Long-Term Development Issues (April 1979), Vol. II, p. 66, and UN Population Division.

4/ World Bank, Ibid., pp. 68-9.

5/ No slackening in the growth of labor supply is anticipated, in part because labor participation rates for women are very low (though increasing in the 25-49 age groups).

III. SPECIFIC ISSUES TO BE ADDRESSED BY A NATIONAL URBAN DEVELOPMENT STRATEGY

A. (1) Urbanization and Rural-Urban Migration

3.1 The social returns to rural-urban migration appear to be positive. This statement is based on a number of observations. Migration involves a transfer from low to high productivity employment, even after taking account of the dominant types of activity that migrants enter. 1/ Underemployment in agriculture (where underemployment is defined in terms of less than 35 hours per week of work or of income below the minimum wage) is more than double the rate in urban occupations nationwide, and more than treble the rate in Lima.

3.2 Rural outmigration has also benefited rural areas by increasing the land/labor ratio and thereby raising rural per capita incomes. This benefit has not been offset by the loss of high quality workers. The higher education and skill levels of migrants could not have been absorbed in the rural areas, yet were not superior enough to attract capital and other resources that might have held these migrants in their areas of origin. The contacts of migrants with their home communities facilitate the integration of rural areas in the mainstream income within the lower income groups. In addition, the marginal capital-labor ratio in migrant urban occupations is probably lower than in agriculture because of the high capital costs of irrigation projects, hence the marginal output-capital ratio is much higher.

3.3 Migration also facilitates attainment of the objective to increase the accessibility of the population to public services since it is probably cheaper to supply these services in the city than in the Sierra from where most migrants come, partly because of economies of scale, partly because of the terrain in the Sierra. Of course, it may be cheaper still to supply these public services in towns and cities other than Lima. A study to investigate this should to be undertaken (para. 4.8). The public burden of the housing costs of rural-urban migration is eased by the reliance of migrants on self-construction and self-financing.

3.4 Finally, another social gain from the transfer of population from rural to urban areas is the associated decline in fertility, since it may

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1/ More generally, urban output per worker is about five times the value of agricultural output per worker.

be argued (see paras. 2.21-2.22) that a reduction in the rate of Peru's population growth is one of the keys to raising mass living standards. 1/

3.5 In the case of Lima, a high proportion of the immigrants came from smaller towns rather than from the rural areas. However, their parents were often born in the rural areas. This pattern of inter-generational migration should not be confused with the more common pattern of "stepwise" migration where the rural migrant makes an intermediate stop at a smaller city before moving to the primate city. The upshot of these arguments on migration is that the "problem" of urbanization and particularly of Lima's size and growth rate has been exaggerated.

A. (2) The Primacy of Lima

3.6 The net private returns to migration to Lima have been positive. This is confirmed by respondents to survey questions about levels of satisfaction, the comparison of real income levels achieved in Lima with those earned at areas of origin, the narrowing of the education gap between migrants and natives over time, the greater accessibility to public services--especially water and electricity supply--relative to areas of origin, the ease with which migrants are absorbed into the labor market (though admittedly the work obtained is often in the service sector rather than in government or industry), and the upward mobility of many migrants over time in terms of job status and income levels. 2/ The evidence belies the "marginality" myth relied on heavily by those in favor of attempts to stem the flow of migrants to Lima.

3.7 The original primacy of Lima can be explained in historical terms. It had natural locational advantages for a coastal site: the natural harbor at Callao, the river and its location at the foot of a Sierra pass. This made it a sound choice as the major administrative center and trade link with Spain during the colonial period, particularly since the merchants of Lima also had a monopoly of the Chilean and Bolivian markets. Throughout the colonial era the wealth of Lima was dependent upon Sierra mining and agriculture and hence was subject to extreme cyclical fluctuations associated with the export performance of these products. The stimulus to the economy of the boom in guano exports after 1840 and the subsequent diversification into sugar was offset by stagnation in the traditional Sierra products.

1/ The rate of urban population growth remains much higher than the rate of rural population growth (5.02% compared with 0.46% in the years 1961-72, (Oficina National de Estadistica y Censo, Boletin de Analisis Demografico, Vol. 13, 1972)) due to the high rates of rural-urban migration, and not due to higher net reproduction rates in urban areas in contrast to rural areas.

2/ For more details see World Bank, Peru: Long-Term Development Issues, (April 1979), Vol. II, pp. 103-108.

In the twentieth century mining recovered, coastal agriculture flourished and there were some beginnings in manufacturing production. Since the growth of the economy was accompanied by rapid urbanization, and the control of most economic activities remained in Lima, the capital grew much faster than other urban centers. Nevertheless, even in 1940 Lima had no more than 600,000 population.

3.8 Its dominance in the urban hierarchy increased substantially after World War II (from 36% of urban population in 1940 to 43% by 1961) as the economy grew rapidly (at an annual rate of 5.5%, 1950-67). This correlation between increasing primacy and rapid GNP growth is a common phenomenon in the recent economic history of developing countries. 1/ The primate city is usually the main beneficiary of import-substitution development strategies and the growth in the government sector. The consequent rise in urban incomes, which in spite of unequal income distributions affects even the low-income groups via "trickling-down" effects, stimulates rural-urban migration. The polarization of migrants to the primate city is typically accelerated by the failure of rural incomes to rise fast enough, if at all, because of high fertility rates, low agricultural productivity and weaknesses in agricultural organization. The economic dominance of Lima surpasses its share of population, once again a familiar phenomenon in primate economies. It accounts for four-fifths of bank credit and consumer goods production and an even higher proportion of capital goods production (>90%).

3.9 The market forces leading to the concentration of population and economic activity in Lima have been reinforced by public policy. The concentration of the central government itself, a massive generator of employment, is the most important of these factors. But there are others. Lima has received a disproportionate share of infrastructure and public service investments, a response to the more vocal political pressures of the capital and to the more accessible information on the extent of Lima's public service lags and deficiencies. The provision of some utility services may have been priced below cost outside Lima, although it is not clear that below cost pricing for power has also applied in Lima. 2/ However, in the case of

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1/ K. Mera, "On the Urban Agglomeration and Economic Efficiency," Economic Development and Cultural Change, 21 (1973).

2/ The Lima power system has provided a heavy subsidy to the Lima water supply system (the capital cost associated with the trans-Andean waterworks and other hydro diversions).

water the value of the subsidy is much greater for Lima residents because the marginal cost of new supplies is much higher there. 1/ In a laudable attempt to rationalize the invasion process, the government has supplied lots to migrant households at zero cost. Mortgage finance has been heavily subsidized. The price of gasoline is much too low relative to the world price, and given the high proportion of motor vehicles in Lima the lost tax revenues imply a heavy subsidy to Lima from the rest of the country. Food prices have been subsidized, shifting the internal terms of trade against the rural areas and resulting in heavy government support to the food import bills of urban consumers. The persistent overvaluation of the sol has harmed the agricultural areas and natural resource regions (i.e., the periphery of the country) by eroding their export potential and has subsidized the main focus of import demand, Lima itself (the latter effect was mitigated, however, during many years of the 1970s because of the extensive list of prohibited imports). The high tariffs and import restrictions associated with the import-substitution strategy have led to the high concentration of most consumer and capital goods industries near the only sizable market in the country, the Lima metropolitan region. Almost all the implicit spatial impacts of macro and sectoral policies have reinforced the growth of Lima at the expense of the rest of the country. Unfortunately, no satisfactory methodology has been developed to quantify these impacts and to assess their relative importance compared to the effects of explicit spatial decentralization policies designed to influence market forces. However, it is probable that these implicit spatial impacts have been substantial, certainly much more important than the effects of explicit spatial decentralization policies for these have been very weak in Peru. 2/

3.10 As argued above, neither the efficiency nor the equity case for intervention to control the growth of Lima is convincing. The evidence suggests that the net private benefits of migration to Lima have been strongly positive, casting serious doubt on the validity of the well-known "marginality" hypothesis. A different set of arguments stresses the net social external diseconomies of scale associated with a rapidly growing Lima. Such diseconomies include congestion, overcrowding, pollution, crime and social alienation.

1/ Utility tariffs are not uniform throughout the country. Domestic and commercial power tariffs, in particular, show considerable diversity, Lima domestic tariffs being below domestic tariffs in most other cities, while small commercial and industrial tariffs are higher. Large industrial power tariffs were about the same in Lima as elsewhere (except in Iquitos, Pucallpa, Tarapoto and Moyobamba, where they are lower), as are agricultural pumping tariffs (execept during evening peak hours when they are over twice as high as those in Lima). The issue of subsidies is being reviewed by the present government. Power tariffs have recently been raised, and phased increases are planned to recover cost by the end of 1981. If fully implemented, this would imply an approximate doubling of tariffs over the mid-1980 level.

2/ This conclusion is generally true, even in countries pursuing "strong" decentralization policies and where the implicit spatial policies reinforcing primacy are weaker than in Peru.

No hard evidence on these problems has been presented or reviewed, however, on the basis of casual observation they appear less severe than in many other world cities of similar size. Moreover, analysis of the relationship between these negative externalities and city size in other countries has shown no clear correlation. 1/ Lima's problem is less a consequence of its current population size or growth rate per se and more a consequence of the strains that the growth rate puts on scarce financial and management resources required to deal with the complexities of managing a large metropolis and of reorganizing its spatial structure to accommodate continued growth.

B. Managing Lima's Growth

3.11 Successive governments in Peru, including the present government, have included slowing down Lima's growth among its policy objectives. Although the reasons normally given to justify this goal are frequently incorrect as noted in the previous section, there are nonetheless good reasons for public policy to aim at reducing Lima's rate of growth and influencing its pattern of growth:

(a) A gradual restructuring of Peru's Lima-dominated urban hierarchy is desirable to develop the longer-term economic development potential of some of the secondary centers hitherto denied adequate resources. This restructuring will probably take a couple of decades, hence the need to start now recognizing fully that any redirection of public investment and expenditure from Lima to secondary cities is likely to have a greater impact on the latter than the former due to the different scales of their economic and demographic bases.

(b) At current migration rates, it may be more difficult to supply Lima's expanding population with basic public services because of diseconomies of scale in urban management or resource bottlenecks (e.g., capacity constraints in local groundwater reserves or nearby surface water). Some evidence supporting this view is that the percentages of population in Lima supplied with water and sewerage declined between 1972 and 1978, though they increased in some relatively urbanized departments such as Arequipa. 2/ Thus, infrastructure expansion may be cheaper in secondary cities, even

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1/ H. W. Richardson, The Economics of Urban Size, (1973), pp. 47-109.

2/ For instance, in Lima the share of population with running water (either house connections or standpipes) fell from 74% to 65% and with sewerage from 59% to 56%. In Arequipa, on the other hand, the water supply share increased from 55% to 70% while the sewerage share rose from 35% to 64%. Cuzco, Pasco and Puno also made impressive gains in water supply provision, though from much lower initial levels of service (Organizacion Panamericana de la Salud-Banco Mundial, Estudio del Sector de Abastacimiento de Agua y Disposicion de Excretas (June 1980), Annex 4, p. 1).

though some investments will still have to continue in Lima to improve the efficiency of its operation and provide the basic services not yet available to many of the city's residents.

(c) Finally and importantly, a sufficient reason to support a policy of slowing Lima's growth is that there seems to be a consensus 1/ in society in favor of it and this consensus seems to persist even when the false economic arguments and the myths of "macrocefalismo" and "subdesarrollo" have been exposed.

3.12 Despite the existence of a rationale for reducing Lima's primacy over time it is critical that the government have realistic expectations of what might be achieved by policies to slow down Lima's growth. Even if most implicit spatial biases are eliminated, and if strong development policies are adopted to promote other urban areas and regions, Lima will continue to grow, probably at a substantial rate. Lima has been, and continues to be, the most efficient location for the vast majority of industries, as a result of the accumulated concentration of industrial and social infrastructure in the capital. However, the efficiency of the location is in part due to the relative price distortions resulting from public policy in the past. That is, the growth of Lima has been artificially stimulated by a number of macro and sectoral policies designed for other purposes. These implicit spatial impacts were probably the dominating public policy actions with respect to primacy, easily swamping the effects of the weak decentralization policies that have been in operation. The implication of this observation is that a successful multi-dimensional spatial decentralization strategy may demand the elimination of implicit spatial policies favoring Lima. In some cases, for example, where subsidies are involved, policy-makers may be unwilling to accept the political costs and, the public, the economic costs, of abandoning them. If this is so, policy-makers should face up to the conclusion that their revealed trade-offs shows the secondary importance of the goal to slow down the growth of Lima.

3.13 Table 3.1 presents some alternative projections of Lima's population in the year 2000. Although these are difficult to compare because of differences in areal definitions, the general conclusion is that Lima's population in the year 2000 will fall within the range of 10 million to 15 million. The latter estimate is probably too high, because it implies an extrapolation of the 1961-72 growth rate of 5.4%, and there are already some signs of a modest deceleration. On the other hand, the lowest projections of 10 million are unlikely to be achieved because they imply a decline in the rate of growth to 2.5% per annum over a twenty-year time horizon. Since the current rate of

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1/ Major difficulties exist in determining how a "consensus" is arrived at. The more articulate and more organized groups in society often have a disproportionate weight. For instance, in this particular case, the "problems" of Lima may be vocalized by a middle class lamenting the passing of an earlier era when the city was less crowded and more relaxed while the welfare gains of both recent and future poor migrants are ignored in the formulation of public opinion.

natural increase in Lima is 2.1%, and fertility is expected to drop modestly if at all, the low projection implies the cessation of almost all net immigration, a highly improbable occurrence. It is likely that the population of the "macro system Lima" (i.e. the department of Lima and the constitutional province of Callao) in the year 2000 will be close to the mean of this range, assuming modest success in attempts to slow down Lima's growth and the continuation of the current mild deceleration trends.

3.14 Thus, even the most optimistic assumptions imply a Lima in the year 2000 more than double its present population size (perhaps about 5.6 million people in 1980 in the macro system Lima). Certain policy conclusions follow from acceptance of this "fact" or constraint. First, the expected growth of Lima's population will require an expansion of urban services. This, coupled with the backlog of existing unsatisfied demand, will necessitate continued investment in Lima, particularly to provide urban infrastructure and services to the poor. Second, independent of its precise size by the end of the century, a much larger Lima will pose major problems for metropolitan administration/management and spatial organization. These problems will arise regardless of whether or not policies are adopted to promote other development areas and regardless of whether, if adopted, they are a success.

3.15 The problem of strengthening urban management and public administration in metropolitan Lima raises complex issues, and merits separate consideration (paras. 3.67 and 4.4). The problem of spatial reorganization of metropolitan Lima is, on the other hand, easier to handle than the more fundamental issue of urban administration and management, even though implementation of a spatial reorganization strategy will be difficult. Although the permutations are many, there are three main possibilities for reorganizing the spatial structure of metropolitan Lima. One is the continuation of current and past trends, namely continuous extensions to the boundary of metropolitan settlement at low densities. The second is a strategy to contain the boundaries of the metropolitan area by accommodating the existing and new population at much higher densities. The third is some kind of planned pattern of development within a broader metropolitan region, typically involving the promotion of a polycentric spatial structure. Several variants of this last alternative have been suggested, but most of them fall into two main categories: either a coastal development corridor stretching to the north and south of the existing metropolitan area or some kind of transversal pattern of development linking Lima with the larger towns of the Central Sierra.

3.16 The three principal alternatives are not mutually exclusive or incompatible. However, of the three possible approaches, the second is least tenable on its own as it is almost impossible to prevent invasions on the periphery in order to concentrate exclusively on infilling presently undeveloped interstices. There is, though, some scope for increasing densities for new population, for instance by allocating smaller lots and laying out narrower streets in newly settled areas. This would be desirable in any case because it would reduce the costs of infrastructure provision. There are random instances of "densification" on existing sites as the construction of second stories accommodates extended families or permits renting to friends and others. But the net effect of these spontaneous changes in density is relatively modest. Policy-induced increases in density on already developed sites

are unlikely to occur to any insignificant degree. The strategy of urban renewal (one possible instrument for this purpose) is too costly in terms of assembly, demolition and clearance, and construction costs, and in some instances, such as the redevelopment of tugurios, might call for lower rather than higher densities. Furthermore, containment of the metropolitan boundary to its present size is infeasible because of the impossibility of preventing invasions, at least in the absence of creating residential sites at other locations.

3.17 The first alternative, the continuation of past trends, is the outcome of predominantly market forces, and is likely to persist in the absence of strong government intervention. The preference for low densities in urban Peru has been institutionally reinforced by the free allocation of plots on government land. The coexistence of spontaneous invasions alongside planned peripheral settlements makes it even more difficult to change the pattern of peripheral extension of the metropolitan area. Yet the pattern of

Table 2

Table 3.1: POPULATION PROJECTIONS FOR LIMA FOR THE YEAR 2000

Source	Urban Definitions		Population (000)
INP, 1977	Metropolitan Lima		12.864 (2005)
Instituto de Planeamiento de Lima (November 1977)	Metropolitan Lima including coastal corridor from Barranca to Pisco		15,000
MVC, Direccion del Plan Lima (March 1979)	Provinces of Lima and Callao	a. Passive b. Normative	14,400 11,400
Plan Lima (May 1979)	Macro System Lima (i.e. Department of Lima and Province of Callao)		15,472
MVC, Normative Population in the Macro System Lima in the Long Run (1990-2000) (February 1980)	Macro System Lima	a. Low b. High c. With Decongestion Corridors	11,400 13,100 11,700
Binnie and Partners (The Water Resources for Greater Lima, September 1970)	Greater Lima		14,210
C. Bazan (Forum Lima, 1977)	Metropolitan Lima	a. Low b. High	9,606 13,807
Oficina Nacional de Estadistica (WP 10)	Metropolitan Lima		10,486

development has not been the most efficient. The most suitable land for urban development has not been absorbed first, and in the past agricultural land has been destroyed too early as market pressures induced farmers to sell out to developers. The densities adopted have made it even more difficult for the public sector to make up lags in the provision of infrastructure and public services. The low densities have not merely raised public service costs but have resulted in transportation expenditures that absorb a sizable proportion of the budgets of peripherally located poor. 1/ This burden is becoming heavier as relative prices shift against transportation, while the piecemeal pattern of metropolitan development has not been conducive to the planned decentralization of jobs that might have permitted some relief to the cost of commuting.

3.18 In these circumstances, it is hardly surprising that Peruvian urban planners have argued in favor of the third alternative, that is the spatial restructuring of the metropolitan region. Most of the proposals are based on the principle that the problems of Lima should be analyzed on a geographically larger scale. One suggestion, proposed in the National Urban Development Plan of the last government, 2/ is to link Lima with the major towns of the Central region, especially the Sierra, including Huancayo, Ica, Cerro de Pasco, La Merced, Ayacucho, Huaraz, Tingo Maria and Huanuco, in what was called the Central Urban System. The basic idea behind this proposal is very laudable: the integration of urban and rural development areas in all three macro-regions, the Costa, the Sierra and the Selva. More specifically, it involved the promotion of Huancayo as the principal dynamic center of the macro system to compete with Lima in attracting industry and private investment and to hold migrants in the Sierra. It also called for measures to improve the productivity of agriculture and to achieve a closer integration of mining with the rest of the economy.

3.19 This strategy is probably not viable. An attempt to promote stronger linkages between Lima and the Sierra towns would be likely to fail because the implied hierarchy is somewhat artificial, especially when compared with the natural vitality of a coastal axis. Moreover, the topographical barriers between Lima and the Sierra towns are costly to surmount making the strengthening of the interurban communication network very expensive. This accounts for the conclusion of a more recent MVC document that the planned infrastructure projects permitted by available public investment resources were insufficient to generate a transversal axis. 3/ On the other hand, the reinforcement of Huancayo's dominance in the Sierra is a sound strategy, though it has only an indirect role in attempts to decongest Lima, namely

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1/ See USAID, Peru Shelter Sector Assessment Study (February, 1979), pp. 21-2.

2/ MVC, Plan Nacional de Desarrollo Urbano: Macro Sistema Centro (June 1980).

3/ MVC, Evaluacion de los Proyectos de Inversion Publica y sus Implicancias en el Macro Sistema Lima (August 1980).

that Huancayo is attracting migrants from the rest of the Sierra who might otherwise have moved to Lima. But this implies that Huancayo is the key to a central Sierra strategy rather than a metropolitan region strategy.

3.20 Most recently discussed strategies for the spatial reorganization of the metropolitan region are based upon the principle of promoting development corridors, or in the terminology of Peruvian planners "decongestion corridors," along the coast to provide alternative locations for migrants and industrial investment. The most clearly articulated of these strategies was published by the Instituto de Planeamiento de Limo of the National University of Engineering in 1977. 1/ It is important to examine this proposal since it has been recently adopted (September 1980) in principle by MVC. The plan is based on promoting three subregions, in the north, the central area and the south. The main urban centers in the North would be Barranca and Huacho with Palivilca and Supe as supplementary centers; in the South, Chincha Alta, Pisco and Canete would be given priority, but San Martin and Ica would also be developed; and in the central subregion, Chancay, Huaral, Ancon, Pucusana and Mala would be promoted as subcenters around Lima. Within Lima itself, the emphasis for accommodating increases in population would be placed on "densification" rather than on opening up new areas.

3.21 The criteria for delimitation of the metropolitan region along the coast was based on four main principles: the existing hierarchy of urban centers, the ability to serve agricultural areas with a transport network, geographical homogeneity (hence confinement of the region to the coast), and the possibility of integrating the whole region in a spatial strategy. The aims of the decongestion plan were: to use the existing urban system as a base for the future urban system, but to promote a principal urban center in both the north and the south; to organize an urban-regional system interconnecting all the urban centers of the region; to control the development process, especially to avoid land speculation and to preserve the irrigated agricultural areas from the effects of urban development, to attract migrants to the north and the south subregions by providing them with job opportunities, land for housing and accessibility to work, shopping and public services; and to develop a port in the south (at Punta de Pejerrey, San Martin) as an alternative to Callao. The original 1977 Plan worked with a study area population of 15 million, assigning 8 million to Lima-Callao and 3.5 million each to the north and south subregions. A more recent MVC report aimed for a regional population of 11.7 million, 10 million in metropolitan Lima itself, 600,000 in the northern corridor's major centers (Huacho and Barranca), 450,000 in the southern corridor cities (equally distributed among Canete, Chincha and Pisco), and 650,000 in the rest of the region (including 100,000 in Mala). 2/ These targets involved dramatic readjustments in the past (1961-72) growth rates, downward in the cases of metropolitan Lima, Barranca, Huaral, Chincha and Pisco and upward in Huacho, Canete and Mala.

1/ Instituto de Planeamiento de Lima, Universidad Nacional de Ingenieria, Acondicionamiento Territorial para la Region Metropolitana Nacional (November 1977).

2/ MVC, Poblacion Normativa en el Macro Sistema Lima a Largo Plazo, 1990-2000 (February 1980).

3.22 It is infeasible in a short report to evaluate this decongestion plan in detail, but some general observations are possible. The idea of a polycentric metropolitan region is probably sound, though the distance in this case may be too great for efficient integration. A coastal corridor makes more sense than a transversal system to link the Sierra to Lima on the grounds of feasibility and cost. Nevertheless, the coastal corridor plan appears to be expensive and would place a huge strain on public investment resources. The 1977 report estimated that 1,900,000 million soles of investment would be needed by the year 2000 compared with a INP estimate of resources available of 300,000 million soles; obviously, costs have escalated sharply in the last few years. Some of the specific investment ideas, such as rapid rail transit along the corridor, would be too expensive, and it is doubtful whether such a link would prove to be competitive with the road. There are huge risks involved (and several unhappy precedents in Peru) in investing in infrastructure ahead of effective demand. Thus, the plans to develop principal centers in the north and south could easily fail because of the inability to attract private industry there. Significantly, all the centers in the study region grew much more slowly than Lima in the 1961-72 period. 1/ In the absence of strong policy instruments to induce industry to move to the decongestion satellites 2/, the strategy is unlikely to result in the diversion of many migrants to these areas instead of going to Lima. On the other hand, if successful, the strategy may accelerate migration to the metropolitan region as a whole rather than divert migrants from Lima. As a result, primacy--if the primate city is defined broadly as the whole metropolitan region--would be increased rather than reduced, with a significantly larger metropolitan region population in the year 2000 than if the strategy were not adopted. This outcome is not necessarily inconsistent with efficiency, but it certainly contradicts the objective of slowing down metropolitan growth and the philosophy of national spatial integration. Moreover, there is no guarantee that the public investment resources needed to implement the decongestion corridors would be siphoned away from Lima, given the political pressures in Lima to sustain public investment there, the main sufferers could well be the intermediate cities in the country as a whole or the small urban centers in the rural areas. In short, the decongestion corridors plan is quite expensive. If successful, it would reinforce primacy. If it failed, probably because of the inability to attract jobs, there would be a massive waste of scarce public investment resources. If the government is committed to the Plan, it should proceed cautiously, perhaps initially by promoting development either to the north or to the south and only in the urban centers considered to have the most economic potential.

3.23 Another point related to the spatial organization of Lima based on the expected growth of the city by the year 2000 is that the policy goal to preserve agricultural land within the existing metropolitan area in the long

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1/ The annual population growth rates were 2.2% (Chincha), 2.4% (Canete), 2.6% (Mala), 3.3% (Huacho), 3.5% (Pisco), 4.3% (Barranca) and 4.7% (Huaral) compared with 5.4% for Lima.

2/ There is strong government support for establishing a Free Zone at Pisco.

run is utopian. The pressures for physical expansion of the metropolis are too strong, even with the adoption of "densification" policies for the existing urbanized area and of measures to promote decongestion satellites. The opportunity costs of agricultural land within the metropolitan area for urban development will be so high that it will be almost impossible to justify its preservation in terms of economic efficiency. It is probable that the resources needed to maintain this agricultural land could be used elsewhere more efficiently, perhaps to raise the productivity of existing agricultural land or to irrigate new land. But the more important point is that preservation is impossible both politically and socially, because this is not a situation of marginal population change but of quantum leaps in population. Assuming that new Lima residents could be accommodated at densities 50% higher than prevailing densities and that the lower population projections are realised, urban land in and around Lima will have to increase by about 30,000 ha before the year 2000. 1/ It is unrealistic to expect the approximately 8,000 ha of land currently in agricultural use to survive, notwithstanding the adoption of "densification" and "decongestion" strategies and "infilling" the vacant desert zones within and near to the built-up metropolitan area. A study of the problem (including the opportunity costs of the land, additional commuting costs from "leapfrogging" these areas, the opportunity cost of water used in irrigation for meeting basic human needs, the enforcement costs needed to prevent invasion and the theft of crops, and other considerations) would almost certainly show that an equivalent amount of agricultural land could be created elsewhere at a lower social and economic cost. Of course, this intuitive conclusion is not intended to preempt the justification for such a study.

C. Developing Secondary Cities

3.24 Although Lima dominates the urban hierarchy in Peru (with metropolitan Lima accounting for about 41% of total urban population), the Census data in Table 3.2 shows that most of the Peruvian cities larger than 50,000 were growing faster than Lima in the period 1961-72 (the exceptions being the coastal cities of Piura, Ica and Sullana and the Sierra city of Cuzco). This represented a dramatic change compared with the previous twenty years, when only Chimbote, Pucallpa and Chiclayo grew faster than Lima. The faster growth of the secondary cities in the 1961-72 decade is encouraging to the prospects of success for a national urban development strategy, particularly since it appears to have been an endogenous process. 2/ Unfortunately, there are no accurate data on urban populations available since 1972. However, impressionistic evidence suggests that the growth rates of the secondary cities have slowed down, with a few exceptions such as the "boom" towns of the Selva

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1/ This calculation is based on population estimates of 5.6 million and 11.4 million for macro system Lima in 1980 and the year 2000 and a target density of 195 persons per ha.

2/ It was not stimulated by explicit urban and regional policies, and it is not explained by random short-run factors, except in the case of Chimbote where the rate of expansion was accelerated by the temporary fishmeal boom.

Table 3.2: GROWTH RATES OF CITIES AND URBAN SIZE CLASSES, 1940-72

	% Per Annum		Share of Urban
	1940-61	1961-72	Population, 1972 (%)
Lima-Callao	5.0	5.8	43.87
Arequipa	3.2	6.2	4.23
Trujillo	5.0	8.5	3.52
Chiclayo	5.4	6.4	2.64
Chimbote	13.4	9.3	2.21
Huancayo	4.2	6.4	1.76
Piura	4.6	5.3	1.76
Cuzco	3.3	3.9	1.68
Iquitos	2.9	6.2	1.55
Ica	4.6	5.3	1.32
Sullana	4.2	4.8	1.16
Pucallpa	12.1	8.3	0.88
Tacna	4.4	7.2	0.82
Urban population: /a			
2000-19,999	3.3	4.3	22.60
20,000-49,999	3.5	5.4	10.00
50,000-99,999	5.1	6.0	4.19
> 100,000 (excluding Lima)	4.4	6.6	19.35

/a The size class categories refer to the 1972 size of cities.

Source: Oficina Nacional de Estadistica y Censo.

(especially Pucallpa) and Huancayo and perhaps Cuzco in the Sierra. This reversal need not dampen belief in the viability of promoting the development of some secondary cities, however, since the deceleration in growth rates is primarily a result of the implicit spatial policies pursued by the military government and the effects of the economic recession of the past few years.

3.25 Despite its expressed commitment to the decentralization of economic activity, the policies of the military governments of 1968-1980 had the opposite effect. Intervention in the industrial sector depressed private industrial investment. This was not compensated by an expansion of public sector industrial investment, except in a very limited number of sectors. The government's plan to create a set of highly specialized industrial cities (such as the automobile industry in Trujillo and metal processing and mechanical engineering in Arequipa) was misconceived and largely a failure. Most of the investments that were undertaken were in large-scale capital-intensive industries, the so-called priority "basic" industries, with a very limited capacity to absorb labor. The small- and medium-scale industries on which industrial employment growth and expansion in the secondary cities largely depends were neglected. Although industry in general received substantial fiscal incentives depending on the priority assigned to the specific industry, the additional incentives for choosing a site outside Lima were very small (on average about one percent in the rate of return), certainly much too small to compensate for the higher risks and greater uncertainties associated with investment in the periphery. The raising of tariff barriers (including prohibitions) reinforced the already massive advantage of a Lima location. Agrarian reform, in spite of its undoubted political and social benefits, did not result in a high level of managerial capacity in agriculture, and uncertainty about the long-term delivery of raw materials dampened investment in agro-business. This is important because the industrial prospects of the secondary cities are closely linked to the development of agro-based industries. Infrastructure investments in the secondary cities were inadequate, partly because of the diversion of public investment resources into a few massive projects (such as the Majes irrigation project), partly because of the drying up of public investment after 1977 as the recession deepened. At the same time, the limited resources that were available were not allocated wisely; for example, building industrial estates ahead of demand (e.g. at Tacna) turned out to be a disastrous failure, with the single exception of Arequipa. Most important of all, the severity of the economic recession--partly the result of exogenous economic forces, partly the result of the government's mismanagement of the economy--halted the process of economic decentralization. In general, the spatial dispersion of economic activity requires conditions of economic boom and a high rate of industrial and public investment. It is hardly surprising, therefore, that the growth rates of secondary cities have markedly slackened in the last few years.

3.26 This analysis suggests that the slowdown in the decentralization process is temporary, and may once again be reversed. However, for a national urban development strategy to be effective it is necessary that its implementation, based on public investments in selective locations, be accompanied

by the adoption of a series of complementary policies. First, it would be desirable to adopt an industrial location policy to effect the location of private industries. However, for this there must be a revival in private industrial investment. Until then implementation of a strong industrial location policy will be constrained. In addition, since the latter would require not only larger fiscal incentives for secondary city locations, but also taxes on industrial development in Lima in order to bring about a large enough shift in relative location costs, and to permit a self-financing tax-subsidy scheme, it would be untimely to implement such a policy in the present period of investment uncertainty and in a context in which there are not yet many footloose industries. Therefore, a location of industry policy must wait and this means that an effective national urban development strategy that aims at significantly changing the spatial distribution of economic activity must also wait. Hence the proposals suggested in the next few paragraphs are for the medium term rather than for implementation in the short run.

3.27 A second set of measures which would be required to successfully implement a national urban development strategy is the improvement of agricultural organization and productivity, the elimination of the negative by-products of agrarian reform, and the strengthening of urban-rural linkages. These are obvious priorities for the country as a whole and are being treated as such by the government, but they are critical to the successful promotion of those secondary cities linked to rural areas, whether by proximity or as transportation nodes. Policies to strengthen the agricultural sector will be supported by the current shift in trade policy emphasis from import substitution to export promotion.

3.28 A third set of measures required to implement a national urban development strategy is the modification, if not elimination, of the implicit spatial policies favoring Lima. Many of these implicit policies are in the form of subsidies, and an important side-benefit would be relief to the public exchequer. Of course, the elimination of subsidies often involves a political cost, and the government will have to weigh whether the implications for the relevant sector are tolerable. However, it is important to realize that spatial decentralization strategies are likely to fail as long as the growth of Lima is indirectly supported by a barrage of macro and sectoral policies.

3.29 A fourth set of measures required to implement a national urban development strategy is the generation and allocation of more resources for infrastructure and public service investments in secondary cities. As suggested above, the recent economic crisis has virtually halted new infrastructure investments since 1977 and contributed to an increase in the backlog of unmet service needs. Also, improvements in social infrastructure (schools, health services, cultural amenities) are needed if the secondary cities are to attract private industry. Industrial infrastructure is equally important, though in the past serious mistakes have been made by supplying such infrastructure at locations where the economic potential for industrial growth is unclear. The problem of generating new resources for financial infrastructure investment is critical, since existing resources are spread too thinly

(accommodating growth in Lima, investing in rural development, jungle projects, large-scale irrigation and hydroelectric projects, etc.).

3.30 Finally, administrative decentralization of decision-making would undoubtedly enhance the capacity of the secondary cities to grow. The consequences of implementing the Constitutional mandate for administrative decentralization (see paras. 3.64, 3.65) are unclear, and will remain so for some time. Moreover, it is possible that such decentralization will make it much more difficult to give high priority to some cities and low priority to others, since "fair shares" allocation criteria may be institutionalized in the new decentralized system. On the other hand, there are other forms of decentralizing decision-making that may make it easier to implement a national urban development strategy. One example is decentralizing decision-making of the banks which has made some progress in the last year or two. This increases the flexibility of local bank managers to respond to local demands for credit and loans, resulting in increases in the size of loans that can be advanced without headquarters' approval and much faster decisions. It is obvious that a similar flexibility of response is needed in the public sector (see next section) so that local agencies have more freedom in choosing and being able to finance local infrastructure projects.

3.31 Assuming that these various measures can be adopted what form should a national urban development strategy take? It is not possible to offer more than preliminary observations on this point because the required information is not available. For instance, the relative costs of developing different cities in Peru are unknown. It is clear that minimization of public investment costs is not in itself a rational criterion for an urban strategy as the benefits side of the picture is equally crucial. However, focusing on costs is nevertheless very important because of the severity of the public investment resources constraint. There is also little detailed information on the relative economic development potential of Peru's secondary cities, although there is an abundance of unsupported opinions. A related problem is the appropriate degree of relative emphasis on the Costa, the Sierra and the Selva. Although most of Peru's cities are located on the coast, there are some vigorous urban centers in the other two macro-regions. Many observers stress the high potential of the Selva, while others believe that there are some prospects for agricultural revival in the Sierra. Even if these judgments are valid, two key questions remain: what is the labor absorbing capacity of areas outside the coast, and what is the extent to which urban-rural linkages can be fostered in these areas. A study is proposed in para. 4.6 to address these issues. Until this study is completed the following assessment of existing proposals for a national urban development strategy must be viewed as tentative.

3.32 Simultaneous approach at all levels of the urban hierarchy. Any sensible national urban development strategy should deal with all levels of the urban hierarchy rather than with merely the top tier. The rationale for this view is based on two main considerations: the importance of low-order centers as supply points of public services to the rural population and as potential off-farm employment workplaces; and the possibility that small-scale

public investments in such centers may generate sizable increases in welfare. 1/ Resource constraints, however, preclude simultaneous development oriented interventions at all levels of the urban hierarchy. There is therefore a need for selectivity and phasing of development. A number of different selection criteria are discussed in the following paragraphs.

3.33 One approach would be to invest heavily in the bottom tiers of the hierarchy as a component in an integrated rural development strategy. The problem with this approach in Peru is that it would require a large number of organizational and management changes in agriculture and a viable strategy for creating off-farm employment. Also, since it would imply priority to the Sierra, a region of high emigration (although some centers in the Sierra are attracting population) it is a high-risk strategy that could lead to under-utilized investments. On the other hand, it is consistent with spatial equity objectives. However, since Peru's comparative advantage in agriculture is highly dubious, the bottom-tier strategy is not an optimum investment strategy and its potential spatial equity benefits do not compensate for its inefficiencies in terms of contributing to the growth of national product.

3.34 Another proposal which has been discussed is a possible consequence of the plans for administrative decentralization. If the decision is in favor of a limited number of regions, the idea is to establish regional administrative capitals not in the major city of coastal regions but in an inland city, typically in the Sierra, for example, Cajamarca rather than Chiclayo and Huaraz rather than Trujillo. Such selections would be intended as an instrument of regional development promoting the growth of the cities and revitalization of their hinterlands. The proposal is interesting and has some merit, but a serious problem is the high degree of inaccessibility to Lima, especially in terms of air routes and telecommunications, and to other parts of the region. Unless resolved, this could interfere with the efficiency of the administrative decentralization process.

3.35. Countermagnet approach: Often, national urban development strategies tend to focus on the large cities, in part because the promotion of these cities is usually associated with induced spillover development down their own regional hierarchies and in part because discrimination in favor of a very limited number of cities is justified to avoid dilution of impacts. In its extreme form, such discrimination may imply a "countermagnet" strategy where one city is promoted to compete with the primate city (a good example is South Korea, where Busan competes with Seoul, or in Colombia, where Cali could be promoted as a countermagnet to Bogota 2/). This extreme form of a selective

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1/ The smaller towns are particularly important in the Sierra, where some of them may serve as decongestion satellites for Lima, and they are potentially important in the Selva as new areas are opened up for development.

2/ Countermagnets are typically the second-ranked city. Cali is ranked number three in Colombia, but is preferred as a countermagnet to Medellin because the latter faces severe topographical constraints on its future growth.

strategy is impractical in Peru, because the gap in size between Lima and the next cities is too wide. 1/

3.36 One macro-region approach: another selective approach would be to give priority to promoting urban centers in one of the macro-regions rather than promoting a selective set of cities in all regions. The Costa has been the major focus of urban development in Peru in recent decades. Many of its cities have reached a size capable of generating agglomeration economies. On the other hand, some argue that the water resources constraint makes it increasingly expensive to develop the coastal cities very rapidly. The evidence in the 1960s suggested that most of the urban development potential lay in the north. Chimbote and Trujillo, and to a lesser extent Chiclayo, grew much more rapidly than Lima. However, more recently, growth stimuli in the north have dampened, perhaps more than elsewhere in Peru. The success story with respect to economic development has been in the south at Arequipa. Whereas industrial estates elsewhere in Peru have remained empty, the estate in Arequipa is now full and a second estate is under construction.

3.37 There have been proposals for stimulating the urban centers of the Sierra, 2/ but with the notable exceptions of Arequipa (a Costa-Sierra hybrid) and Huancayo (an agricultural supply center for Lima) most of the towns of the Sierra are small and stagnant. The implementation of highway projects in the Central Sierra offers some prospects of promoting a transversal axis though the topographical obstacles to better communication are immense. On the other hand, the emphasis placed on developing resources in the Selva does not necessarily imply a need to promote the development of urban areas. At present, only two cities of any size exist there (Iquitos and Pucallpa), and it could be argued that in frontier resource regions investments in urban areas respond to resource development rather than stimulating new economic activity. However, focussing on the urban centers in one macro region does not amount to a national urban development strategy.

3.38 Efficiency approach: The scarcity of public investment resources justifies an emphasis on efficiency criteria. A reasonable interpretation of these criteria would be to give priority to those secondary cities that have already been most successful. These are cities where infrastructure investments would have an early payoff. However, other than relative success, the cities in this category in Peru share no unifying features for their economic bases are very different. There is more rationality in developing a coherent system of cities, for example through unifying and linking dispersed economic activity in a coastal axis strategy, than in promoting many centers whose activities do not complement each other or contribute to mutual growth. However, the successful promotion of the coastal axis cities as a group probably depends on the attraction of more industry which is unlikely in the

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1/ Lima is more than ten times larger than Arequipa, the second largest city in Peru.

2/ A notable illustration of this type of strategy was contained in the National Urban Development Plan for the Central Macro System (MVC, Plan Nacional de Desarrollo Urbano: Macro Sistema Centro, June 1950).

near future, at least until a strong location of industry policy is adopted and/or the organization of the agricultural system is improved to permit the expansion of agro-based industries. Hence, the efficiency criteria for selecting cities should be given precedence in the initial stages of a national urban development strategy. The development of a macro region as a criterion for selecting cities should be used in the second phase of a national urban development strategy. Other selection criteria can be used in the following phases.

3.39 Phasing of a national urban development strategy is critical, given the large number of major towns involved, the scarcity of mobile industry and doubts about the short-run economic potential of some of the secondary cities. An initial sharp focus on the "high potential" cities will maximize the economic return from scarce infrastructure resources and avoid the wasted investments observed in the cases where a "supply led" investment strategy was adopted. Moreover, this approach would enhance the prospects of slowing down migration to Lima. Designating priority cities for development would not rule out the eventual development of other cities as resources become available and regional policy instruments are strengthened.

3.40 The secondary city development strategy proposed here involves the phasing of specific city choices consistent with the availability of public investment resources. It would have to be subject to review in the light of the information provided by the proposed study on comparative urban development costs and the evaluation of relative economic potentials and investment opportunities (para. 4.5-4.9). The emphasis in a national urban development strategy on secondary cities or the second tier of the urban hierarchy rather than on the lower tiers implies the continued importance of agglomeration economies.

3.41 The general approach suggested here has the merit of political acceptability because it is not highly discriminatory in favor of two or three cities, though there are different levels of priority that imply a phasing of investments. There is a danger that policy-makers may be willing to adopt a strategy, but unwilling to follow through with the policy measures needed to implement it. These measures are undoubtedly difficult and have to be implemented consistently and with tenacity. The requirements are many: the generation of more resources for infrastructure and public service investments, and diversion of a higher share of these to the secondary cities; the timely adoption of an effective location of industry policy, including a strategy for stimulating agro-based industries, and measures to promote and assist small-scale industry; allocation of investments to strengthen the connectivity of the national urban hierarchy, especially with respect to telecommunications but also involving the completion of a national trunk road network; and implementation of a system of administrative (regional) decentralization that promotes local decision-making and initiative and improves operational efficiency without leading to interregional stalemates in resource allocation that inhibits the setting of spatial priorities in national development planning. Even if these requirements can be met, policy-makers must recognize that successful implementation of any national urban development strategy will only

marginally contribute to the slowing down of Lima's growth over the next two or three decades. Hence, rationalizing and managing the spatial and economic growth of Lima will still be necessary in the near future.

D. Urban Land Policy

3.42 Historically, the spatial development of Peruvian cities (especially Lima) has taken place in a very haphazard manner because the major decisions were taken on the basis of the operations of the land market as private developers and speculators induced farmers to sell their land. The controls on rural-urban land use conversion were largely ineffective and zoning regulations were overwhelmed by the pace of urbanization. Moreover, while the direction and scale of upper- and middle-class residential areas were determined in the market, a simultaneous process of lower-class invasion of primarily state-owned land occurred on a massive scale. Although these new residents did not receive land titles, the government has generally accepted the invasions as a fait accompli because the invasions were too highly organized to be broken up. In the 70s the state became the owner of all undeveloped desert or jungle land that could potentially be converted to urban uses. Although some problems have arisen with respect to defining undeveloped land and there are some transitional difficulties as private owners sell land illegally to others to avoid expropriation, the long-term effect of the change is to eradicate speculation from the land market. In Lima in particular, agricultural land has almost disappeared so that the government is virtually a land monopolist in some areas in terms of the land to be developed for urban uses. This raises the question of how the government should manage the process of urbanizing and using this land in the public interest.

3.43 The "pueblos jovenes," where settlement began before 1961, have an official status that creates conditions whereby they can obtain title to the land. However, this process involves a series of time-consuming steps including a "remodelacion" plan embodying a detailed plot by plot description as well as an infrastructure plan. But none of the post-1961 settlements have a procedure for obtaining land title. In spite of this, invasions have continued and been tolerated with the result that the pattern of urban development has evolved largely outside government control. There have been some attempts to guide invasions by providing empty lots in undeveloped areas, but this has accounted for only a minor part of the urban development that has occurred. The land title problem is not too serious, although the failure to obtain title may prevent occupiers from obtaining other benefits such as home improvement credits. The problem should be manageable by some legal and/or institutional solution, especially since ownership of undeveloped land in some cities is largely under public ownership.

3.44 A more critical issue is whether the government can develop an urban land policy that gives it a firmer control on the direction and pattern of

urban development. 1/ One possible approach is to anticipate future invasions by making lots available (on a much larger scale than in the past) in locations with physical layouts that can be supplied with infrastructure and services at low cost. This national site and services strategy could have many benefits. It might help to avoid invasions on hillsides where the cost of infrastructure and public services, if and when supplied at a later date, will be much higher. It could attempt to foster a lower-cost pattern of development by offering smaller lots and laying narrower streets; it could also prevent overcrowding that sometimes results from repeated subdivisions. However, a policy of offering unserviced lots at a zero or nominal price is of dubious merit, because it will undoubtedly stimulate the rate of urbanization and the favoring of unnecessarily low density patterns, especially in Lima. If the government could speed up its delivery dates for public services (by reducing standards to an "adequate" minimum, developing a more sustainable resource base via cost recovery, and improving management), the prospect of early provision of public services should induce settlers to pay for government-supplied lots rather than invade sites where there is no possibility of access to water and electricity. This would also facilitate cost recovery where the market cost of land is included in the price of public infrastructure and services projects. Finally, from the viewpoint of a national sites and services policy, a particular problem is the virtual absence of publicly-owned land in and around Sierra cities. Purchasing land on the open market is an expensive option. Developing a policy to resolve this problem is an important priority.

E. Shelter and Basic Services

3.45 Peru has a serious housing deficit estimated to be in excess of one million units. 2/ The deficit is widening because of the impacts of the recession of the late 1970s on private construction and of the failures of

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1/ Although the preservation of agricultural land is an explicit policy objective, there have been cases where exemptions have been granted from the general prohibition of conversion to urban uses. But these exemptions are sometimes arbitrary, reflecting political considerations and the pressures of interest groups. Instead, decisions should be based on a full consideration of all costs and benefits, an evaluation which relies heavily on the estimation of the social opportunity costs of agricultural land in or near urban areas. In metropolitan Lima, the preservation of agricultural land is going to be virtually impossible since the minimum new urban land requirements for housing alone by the year 2000 will be about 30,000 hectares. This assumes a target population of 11.4 million and a high target population density of 170 persons per hectare. A larger population and lower densities are probably more realistic. Because of the extreme political sensitivity of this issue, a study may be in order.

2/ This is the figure mentioned by the President of the Council of Ministers in his message to Congress in late August 1980. Other estimates are higher.

public sector housing. In addition, activity in the key subsector of self-help housing has been slowed by the stagnating or declining real incomes of income groups. BVP is the financial arm of MVC; it supplies funds for housing the residents of the "pueblos jovenes" which have made it increasingly difficult for them to purchase construction materials out of savings. 1/

3.46 The middle class has also suffered because of the scarcity of mortgage finance. More than four-fifths of the housing finance mortgage portfolio is in the hands of the Banco Central Hipotecario (BCH), the Banco de la Vivienda del Peru (BVP) and the savings and loan associations. Of these BCH is the most important in terms of mortgage loans, but it caters to the higher income groups. BVP is the financial arm of MVC; it supplies funds for housing and infrastructure especially for the lower income groups and it administers the savings and loan institutions. The latter cater primarily to the middle-income groups. The BCM, BVP and the S & Ls have all suffered serious decapitalization in recent years in the sense that the real values of their housing portfolio collections have been eroded by rapid inflation. The S & Ls have been allowed to respond to this situation by moving into short-term commercial lending provided that the loans were loosely related to construction. In addition, the government has provided subsidies in excess of US$15 million per year to help to bridge the gap between the interest rates on new loans and the weighted average interest rate on existing loan portfolios. The government has become a major source of funds for housing finance because low deposit rates have failed to capture savings from private depositors, 2/ but this has placed a heavy strain on government resources.

3.47 The new entrant to housing finance institutions is FONAVI, a National Housing Fund, established in June 1978, financed by payroll taxes (4% on employees, one percent on workers) and taxes on construction companies and materials suppliers. 3/ The main objective is to use most of the funds for providing housing outside Lima to low- and middle-income workers covered by the scheme. The original idea was that the funds would be used to finance public sector housing construction (and 6,000 dwellings have been started), but in Septemher 1980 a more flexible arrangement was introduced whereby the S & Ls could participate in FONAVI mortgages and FONAVI workers could obtain loans on the basis of new building permits. Although FONAVI does not charge interest, the loan principal is adjusted in line with the Lima CPI (Consumer Price Index).

3.48 However, the most serious problem is not the quantity of housing available or the rate at which it is supplied, but the quality of the housing

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1/ This difficulty has been intensified by the fact that the cost of construction materials has increased faster than the general price level.

2/ The S&Ls pay 32% for short-term deposits and up to 35.5% for time deposits (more than one year), but the current inflation rate is at 53%. (Boletin del Banco Central de Reserva del Peru, July 1980, pp. 7, 28.)

3/ FONAVI is an adaptation of similar schemes in operation in Brazil, Mexico and other Latin American countries.

stock especially with respect to the availability of basic services, such as water, sewerage and electricity. In Lima, about 1.6 million of the population live in pueblos jovenes 1/ and other peripheral settlements, and more than another million live in worse conditions in "tugurios." 2/ Of these, about one-half have no sewerage, more than two-fifths have no access to public water supply, and more than a third have no electricity. The situation in most of the cities is even worse. Furthermore, conditions have been deteriorating because of the lack of resources to expand services into new areas, as well as, to maintain or upgrade services in areas already served. There are no plans at all to serve many settlements, while the rate of provision in others is painfully slow. This is not a criticism of the water supply (ESAL) and electricity (ELECTROLIMA) companies, which are quite competent agencies, but merely an observation that the resources at their disposal have not enabled provision to keep pace with population growth. For instance, in 1979 ESAL's work program involved 15,724 water and sewer installations, but the number of Lima households increased by more than double this number.

3.49 The priorities for a shelter and services policy in urban areas should be determined in light of the following criteria: public resources should be used only for investments that cannot be undertaken by the private sector (both formal and informal); hence, an important function of the government is to stimulate and guide the private sector and relieve bottlenecks inhibiting its expansion; subsidies should be used sparingly, if at all, and if used should be used differentially for various carefully targeted income groups; housing services should be defined not merely in terms of structures but also in terms of essential ancillary facilities such as water, sewerage, electricity and transportation; 3/ resources should be allocated so as to increase the well-being of as large a number of households as possible (implying an equity oriented social welfare function). If these criteria are acceptable, the requirements of a shelter and services policy fall into place almost as a matter of course.

3.50 An important step is for the public sector to get out, and remain out, of the home construction business, and to deploy its limited resources to provide basic infrastructure and services. 4/ The justification for this

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1/ USAID, Peru Shelter Sector Assessment (February 1979), Annex 6.

2/ A. Cooperstock, Lima: Urban Poverty Analysis (December 1978), p. 1.

3/ To the extent that there is a tradeoff between household expenditures on transportation and housing services (defined inclusively as shelter plus utilities).

4/ Already, 80% of BVP loans are for infrastructure and only 20% are for housing. Moreover, Table 3.3 shows that only a minute proportion of public construction investment is in housing; most of it is in infrastructure. As suggested by Table 3.4, there is a division of labor whereby the private sector provides housing and the public sector supplies infrastructure and services. However, there is a danger that this may be changed if the establishment of FONAVI encourages public housebuilding. Also, much of the public investment in infrastructure has been to serve the middle classes rather than the poor.

recommendation is that in Peru housebuilding can be carried out more efficiently by the private and informal sectors. The upper income groups obviously do not require public support. 1/ The middle income groups, an important force politically, have been relatively deprived in the recent recession years, but the solution is not public housing of the "San Felipe" type but policy measures that stimulate the private sector to divert more resources to producing middle-class as opposed to upper-class housing and credit policies that increase the affordability of middle-class housing. The urban poor in Peru have almost always attended to their own housing needs through "self-help"

Table 3.3: PUBLIC INVESTMENT PROGRAM FOR HOUSING AND CONSTRUCTION, 1980

	Soles Million	%
Infrastructure and Services	10,915.6	85.3
Housing	297.4	2.3
Community Services	470.0	3.7
Industrial Parks	1,120.6	8.8
Total	12,803.6	100.0

Source: Oficina Sectorial de Planificación.

Table 3.4: INVESTMENT IN HOUSING AND OTHER CONSTRUCTION, 1978 AND 1979 (in million soles)

	1978		1979	
	Housing	Other Construction	Housing	Other Construction
Public	445	60,813	1,818	84,200
	(0.3)	(45.6)	(1.0)	(47.2)
Private	62,944	9,263	80,297	12,092
	(47.2)	(6.9)	(45.0)	(6.8)

Source: Oficina Sectorial de Planificación, Vivienda y Construccion.

1/ In fact, many wealthy households receive assistance in the form of negative real interest rates and assistance from BCH.

construction. 1/ This self-reliance has minimized the burden on the public sector, and should be encouraged. In any event, the incomes of the poor are so low that they could not afford formal sector public housing unless it was subsidized heavily on a sustained basis. 2/ The government should give the highest priority to providing the services that cannot be supplied by individual households (e.g., indivisible networks, primarily piped water, electricity and sanitation systems 3/ with special emphasis on the lowest income areas. 4/

3.51 Not only is providing infrastructure services rather than the construction of low-income shelter, a higher priority for public policy, but there is a need for public policy to support further reductions in the standards of services provided in order to supply more settlements at an earlier date. There are two major justifications for this latter argument. First, service provision is falling further and further behind the rate of urban population growth. Second, the alternatives to public systems, such as water from water trucks and candles and kerosene rather than electric power, are many times more expensive (in the case of water often 10-25 times more expensive) than the publicly supplied service. Thus, the argument that the poor cannot afford to pay for public services is weak. The principal constraint is not the ability of the poor to pay but the ability of the public sector to mobilize the technical and managerial resources and the initial capital costs required to eliminate the deficits rapidly. The important policy goal is to satisfy the basic needs of the population as a whole. This requires, in addition to commitment by the public authorities, the abandonment of unrealistic standards of service that ensure that only a small minority is served. 5/

1/ Including mutual help and subcontracting to informal sector builders.

2/ USAID, Peru Shelter Sector Assessment (February 1979), pp. 14-29.

3/ In the coastal areas at least, the dry climate means that both sewerage and paved roads are a much lower priority.

4/ The priority given to "official" pueblos jovenos is not justified on equity grounds, though the political pressures from community organizations are strong.

5/ Given the large areas not served with public water supply, and the sheer impossibility of making house connections in such areas in the foreseeable future, an emergency strategy should be implemented to install standpipes in all the deprived urban settlement areas. Cooperstock (op. cit.) estimated in 1978 that as low as 3% or as high as 16% of Lima's population might have been served with standpipes, depending on assumptions about the radius served. As many as 1,500 standpipes might be needed in metropolitan Lima. Of course, this important intermediate step does not rule out house connections at a later date. Similar reductions in standards could be made with electricity, for example with respect to the size and quality of street lights.

3.52 This will require research into methods to cut the cost of housing (para. 4.12). Such methods might include the relaxations in building code standards, smaller lots and structures, and more efficient production techniques including the substitution of cheaper materials. 1/ Housing standards in Peru are generally very high, and are supported by a culturally induced taste for substantial and high quality housing space. Hence, any strategy to reduce size of structures, quality and costs might have to be accompanied by an education program to change consumer tastes. However, the escalating construction costs of today increase the prospects of success for such a program.

Table 3.5: HOUSING STOCK BY TYPE OF MATERIAL, 1978

Construction Material	Number	%
Brick	871,266	27.3
Adobe	1,454,920	45.3
Stone and clay	276,756	8.7
Wood	180,926	5.7
Straw matting	81,221	2.5
Bamboo/mud ("quinchas")	254,588	8.0
Others	75,176	2.3
Total	3,194,853	100.0

Source: Oficina Sectorial de Planificación.

3.53 It is sometimes argued that the housing problems of Central Lima, with its low-density spatial structure, could be tackled by a major urban renewal program aimed at increasing urban densities. However, such a program would be too costly and would require strong management by public agencies. In fact, the most feasible type of intervention in the central city would reduce densities rather than increase them. This would involve a strategy for upgrading tugurios. Although MVC has had a few projects of this kind, such as the El Porvenir project, they have been predominantly high-cost demonstration projects. The real need is for low-cost improvements in basic

1/ As shown in Table 3.5, only 27% of the housing stock is constructed of brick or other "materiales nobles." Most of the high-quality houses are found in Lima. The preference for brick is so strong that a major education program might be needed to stimulate the adoption of cheaper materials.

services and for reducing the residential density of the tugurios. To reduce the densities successfully would require the government to provide alternative accommodation for those who leave. This might be in the form of peripherally located serviced lots, where the relocated are all volunteers who are presumably less tied to inner city locations. In general, a disproportionately small share of attention has been paid to the problem of the tugurios dwellers (compared with the residents of the pueblos jovenes), in spite of the fact that their numbers are almost as large, and their incomes are generally lower, with living conditions which are certainly more wretched.

3.54 Peruvians also have a strong preference for home ownership. Yet economic circumstances are making it increasingly difficult for many of the middle class to express this preference. As a result, there is potential scope for the private sector, especially in periods of excess capacity, to supply rental housing. Unfortunately, the tightening of the rent control legislation by Decree Law No. 21398 in September 1977 makes the likelihood of this a virtual impossibility. 1/ This Decree would have to be repealed or drastically modified before an expansion in rental housing construction could take place. Even then, much would depend upon the ability of the housing industry to reduce unit costs and on the willingness of private investors to risk the possibility that some future administration might reintroduce tougher rent controls.

3.55 Since many of the difficulties in the housing sector in recent years are associated with the rising inflation rate, a substantial reduction in that rate would markedly relieve the problems of this sector as of many others. However, since control of inflation is uncertain, measures should be designed to enable the financing of the housing sector to adjust to high inflation

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1/ The decree limits annual rent increases to 10% for existing and 12% for new housing. No allowance is made in the adjustment of rates for inflation, and the decree gives tenants security of tenure--even from one generation to another. Only very expensive units (> 2.4 million soles) are exempt.

rates if they continue 1/ that is, to enable the financing of the sector to compete effectively with other savings outlets for private savings; thereby eliminating the need for continuous subsidies from government funds for the S&Ls and other housing finance institutions faced with decapitalization. 2/

3.56 The immediate objective of these policy adjustments is to secure an adequate flow of funds into housing finance. The ultimate objective, however, is to aid the middle classes to improve their level of housing consumption. Implementation of these measures would raise the cost of house purchase, at least at the margin. Hence, it is important to seek out complementary actions that would help to reduce housing costs or at least offset their rise. Innovations in housing finance are one possibility and these should be studied (see para. 4.11). Most of these innovations consist of schemes to alter the distribution of mortgage repayments over the repayment period so that somewhat smaller payments are made in the early years with larger compensating payments to follow. Their general rationale is that the real value of mortgage repayments should increase (or change) over time in line with the real income of the borrower. Although most of these schemes would be targeted at the middle class, a pilot project currently being tested, and sponsored by a USAID housing guarantee loan, is a home improvement loan program for the lower income groups. This program was begun in 1978. It permits loans of up to 500,000 soles, usually for 5-7 years (the maximum loan period is 12 years), to households with below median incomes. The prime benefit of this program in an

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1/ This implies, for example, allowing rates offered to depositors to rise to market levels, and this in turn means higher mortgage rates. Even more important, housing mortgages must maintain their real value in order to protect the housing portfolios of the institutions. This could be achieved most effectively by "indexing" the mortgage repayment to an inflation rate index, in effect implying a continuously variable interest rate. "Indexing" of repayments may be preferable to adjustment of the principal alone in a context of high, as opposed to moderate, inflation rates since the latter could extend the amortization period so far into the future that the loan would never be repaid. Of course, there are many forms of indexation and there is a need to study the various options, particularly in terms of the spread required to maintain the viability of financial intermediares and still be affordable by various classes of mortgagees. The most politically palatable variant may be to index mortgage repayments directly to the wage index, thereby maintaining them as a constant proportion of income. This will impose no additional burden on homebuyers and could ensure that default rates do not increase (which could be expected to occur if real expenditures on housing increased more rapidly than real income). On the other hand, the market "cost of capital" to the financial intermediaries could move at a very different rate (or even direction) from the wage index.

2/ If the government wishes to subsidize the housing sector, the most effective method is by direct aid to target income groups rather than by indirect subsidies that may benefit all income groups.

era of inflation is that it enables low income households to escape the vicious cycle whereby construction costs increase faster than savings, making it impossible to acquire the capital to complete a dwelling. If and when the teething problems with this program are overcome, attempts should be made to extend it to reach a much larger number of households.

F. Urban Transport

3.57 Although there are traffic congestion problems in some of the secondary cities of Peru, especially on the narrow streets of the colonial sections of town, the most serious problems are found in Lima. This is not surprising. Almost all the large cities in developing countries share congestion problems, largely because of the impact of burgeoning rates of automobile ownership on an inadequate road network. In addition, in many of these cities there is a commuting problem especially for the low-income workers living on the periphery and working at sites far from their homes; this problem manifests itself in high monetary travel costs and long commuting trips associated with inadequate or irregular transit services.

3.58 The standard response to this situation in Lima, as in many large Latin American cities, is to argue that the city needs a metro. This has been a source of debate over many years. Even those currently against the metro base their arguments not on its technical or economic demerits but on the view that it is at the moment beyond the reach of Peru's financial resource capability. However, it would be difficult to justify a metro system in Lima under any circumstances. The low density spatial structure of Lima makes it difficult if not impossible to generate sufficient traffic along any given corridor and would certainly not justify a metropolitan wide system. In addition, claims of energy savings often ignore or undervalue the energy costs of constructing the system. Furthermore, the transportation problems of Lima remain very moderate compared with many large LDC cities and, even more important, they can be alleviated at much lower costs than implied by a metro solution, for example through improved traffic management coupled with some investments in upgrading the transportation network and the bus fleet. The benefits from a moderate cost urban transportation strategy are substantial because even the most obvious solutions have not been attempted. 1/

3.59 There are three key components of an urban transportation strategy for Lima. One is to dampen the growth rate of automobile ownership and to moderate their use. In the absence of such action, the manageable congestion problems might very quickly become unmanageable. Another is the implementation of traffic management and control procedures to facilitate the flow of traffic (and possibly to give priority to high-occupancy vehicles). The general solution to existing levels of traffic congestion is not to build more

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1/ The Enefer Central railway runs through the city from Chosica to Callao. This could possibly be used much more extensively for suburban traffic than at present.

roads, though specific highway improvements may be justified. The third element in a workable strategy is to introduce more rationality into the bus system. This is more complex than the other two elements. On the other hand, the measures required are much simpler and much less costly than those implied by a metro solution.

3.60 The automobile stock is growing very rapidly, and 85% of the country's private cars are registered in Lima. Automobile use is artificially stimulated by a price of gasoline that is far below the world price. Moreover, the relaxation of import prohibitions and reduction in import tariffs are likely to result in an even faster acceleration in automobile purchases. In the absence of marginal social cost pricing for road use, an unlikely policy innovation in Peru given the failure to adopt such pricing in much more congestion-sensitive countries, these conditions will generate supraoptimal levels of road congestion and an excessively high proportion of upper-income commuter traffic carried by private cars. The first important step is an adjustment in the current price of gasoline to the world price, as rapidly as political expediency permits. This would have the important side-benefits of promoting energy conservation, eliminating an implicit spatial bias in favor of Lima and improving the distribution of income. 1/ The second requirement would be the imposition of higher taxation on automobiles perhaps via the excise tax or in any other form which does not give excessive protection to domestic automobile manufacturers. Both these measures will substantially contribute to a growth in government revenues, an important benefit in the current era of tight fiscal resource constraints. But their primary benefit would be as a stimulus to higher-occupancy commuting modes. The simplest response would be carpools and shared taxis, but the fact that the middle- and upper-class residential areas are geographically concentrated would allow the organization of vanpools and luxury subscription buses. Of course, this latter response would require entrepreneurial drive, the active participation of companies, and/or public policy support given that there is no precedent in Lima for the use of high occupancy vehicles other than buses.

3.61 The traffic management policies are probably much easier to implement politically since they offer benefits to most road users. Although there are one-way streets in Lima, there is more scope for increasing the number of one-way streets. There is negligible use of solo bus lanes or other high-occupancy-vehicle lanes. Parking controls are not extensive enough and are weakly enforced. Manual traffic light controls slow down the flow of traffic and rule out the implementation of automatic light synchronization mechanisms. Relatively minor investments in road improvements (such as alignment and widening) would relieve critical bottlenecks. These are merely a few of the more obvious examples of low-cost traffic management and engineering innovations that could substantially relieve any incipient traffic congestion problems in Lima.

3.62 During recent years cooperative micro-buses have played an increasingly important role in Lima and now account for some 80% of total passengers.

1/ A 1971-72 survey showed that the richest 10% of Lima's households consumed 70% of gasoline.

The remainder are carried by the Lima Metropolitan Transport and the government owned ENATRU. The age of the gasoline driven micro fleet is a serious problem, although it is at present the best managed of the three systems. The existing bus system in Lima is grossly inefficient. There is little organization of routes with respect to either supplying all areas or frequency of service. Instead, drivers compete ferociously over the densest routes and neglect the lightly traveled arteries. The development of a more efficient city-wide bus system, is urgently needed. 1/

3.63 The proposals suggested here are rudimentary and require the skills of urban transport specialists to elaborate and evaluate them. Such an evaluation would probably result in refinement and modification of these proposals. Nevertheless, it is believed that the essence of the argument is valid. Lima's urban transportation problems are relatively mild when compared with other LDC cities of similar size. Yet the rapid growth in automobile ownership is threatening unless a metropolitan transportation strategy is introduced very soon. A viable strategy should include measures to dampen the growth in private cars, traffic management schemes to relieve congestion and the promotion of a comprehensive bus system. It should not include construction of a metro. 2/

G. Regional (Administrative) Decentralization

3.64 In Peru, as in many developing countries, the government is highly centralized. Most projects are implemented by the sectoral ministries. The powers and fiscal resources of lower levels of administration--the departments and the municipalities--are limited. Yet this situation will change, to some degree at least, over the next few years because the 1979 Constitution mandates that the administration must be decentralized to the regions. In the short run, the Departmental Development Corporations of the 1960s will be revived, replacing the ORDES (Organismos de Desarrollo) and the Departmental Development Committees. The longer-run structure is still unclear, though the Constitution demands that the new regions 3/ have regional assemblies, which will in part be elected, 4/ and have economic and administrative autonomy over a full range of economic and social sectors. However, the degree of autonomy that the regions can attain will depend upon the degree of fiscal independence

1/ Several alternatives will be analyzed in the course of the proposed urban transport project under study.

2/ Gasoline prices were raised by the government to Soles 372 per gallon in January 1981. Although this does not change the relative prices of bus and car transport signficantly (because the increase is passed on to micro-bus users), this was a constructive measure.

3/ Most observers expect the 24 departments to be amalgamated (with some boundary changes and partitioning) into a smaller number of regions, perhaps 6 to 12.

4/ Only 40% of the Regional Assemblies will be elected; the remainder will be appointed.

that they can achieve. The new constitution does not assign them new fiscal resources, but suggests that they will be dependent on central government transfers.

3.65 There are obviously risks involved in any plan for regional decentralization. Replacing a long-established administrative unit (the Department) with a higher level of administration may result in less rather than more local participation. On the other hand, it would permit better utilization of scarce technical and planning resources. However, Peru has neither an effective national planning system nor an interregional planning system and it is not clear how this might develop. The share of public investment in total investment increased substantially during the twelve years of military rule (1968-80), but the present government is more sympathetic to free enterprise. Strengthening national and regional planning could not take place without a major restructuring of the functions of INP or some alternative institutional modification at the central government level. A system based on a very small number of macro-regions is required primarily for technical purposes (e.g. regionalization of a national plan or for the planning of projects that have a very broad geographical scope such as a national highway or a large-scale hydroelectric project). It has few political and social merits, such as increasing local participation. The reintroduction of the Departmental Corporations and their subsequent replacement by a higher-level system would obviously involve discontinuity and be a potential source of instability. These arguments suggest that there would be some virtue in creating the permanent assemblies and councils at the departmental level, and in establishing a system of macro-regions only for planning purposes (involving among other innovations interdepartmental committees to coordinate projects that impacted on areas larger than an individual department). Also, for specialized and highly technical skills that could not be supplied in each department regional pools of resources could be created from which the departmental councils could draw as required. Finally, a larger number of regional administrative units would probably mean that each would be less powerful than a macro-region, and this would permit the central government to discriminate more in favor of some places, for example to implement a national urban development strategy. This would inhibit the development of a "fair shares" mentality where public resources are distributed in strict proportion to population or, even worse, the strength of local political pressures. This danger is the negative aspect of regional decentralization, to be weighed against the gains of more political participation and possibly greater efficiency in the selection, implementation and coordination of projects.

H. Other Issues

3.66 This report has been selective rather than comprehensive in its treatment of topics. This selectivity reflects a combination of factors: the limited time available, especially in Peru; the perceived priorities of the government; and the fact that some issues are so complex that it is better not to address them at all rather than to treat them superficially.

3.67 The quality of urban management and planning, particularly in Lima, is the most important issue of the latter type. It raises a number of supplementary questions such as the organization of local government and the structure of other institutional authorities with responsibilities in urban areas, the supply of professional manpower, their training, career structure and pay scales, all of which are not dealt with in this report, but will have to be addressed in the proposed study on urban management and finances (para. 4.4).

3.68 Other potentially critical issues which have not been discussed include environmental quality control policies. These could become more important in the future, but they are not perceived as a high priority at present. Yet there are some serious concerns: air and water quality in the cities; the proximity of planned residential areas to industrial estates for noxious industries (e.g., the Rio Seco industrial estate in Arequipa); the potential ecological imbalances associated with hydroelectric development; and so on. The problems inherent in the implementation of environmental quality policies in developing countries apply in Peru: the reluctance to trade-off economic growth and jobs against environmental improvement; the lack of adequate control and enforcement mechanisms; insufficient technical and environmental engineering expertise; and the all-pervasive public investment constraint. However, there are some possible actions--for example, site-specific controls over plant location decisions--that could help to avoid environmental disruption at minimum cost in terms of efficiency loss and public investment.

3.69 The report is also selective in its discussion of social infrastructure and public services. Most attention has been given to water supply and electricity on the ground that these are the key basic services, especially in the coastal cities where most of the urban population live. Very little is said about solid waste management and some of the other standard urban services, and there is no analysis of the problems of health, education and other social service provision. These omissions do not imply that they are unimportant. Had they been discussed, it would have been argued that the same general principles apply: the need to ensure selectivity in public investments, especially in the short run; the importance of targeting public policies to the lowest income groups; a concern with minimum standards to ensure that the maximum number of people can be reached; and priority attention to the problems of resource generation and cost recovery.

IV. CONCLUSIONS

A. The Timing of Policy Actions and Investment Programs

4.1 A systematic framework for formulating national development strategy needs to take account of two very different types of distinctions: first, the distinction between policy actions and investment programs; and second, the varying time horizons over which decisions are taken. The current insufficiency of financial and, more importantly, management resources, suggests that for the near future there will be a severe constraint on the size and rate of expansion of a public investment program. This is one reason for recommending that the government focus on policy actions (such as reducing subsidies where possible) rather than committing itself to new or unimplementable investment programs. Given the government's desire for early intervention, there will be a tendency to favor policies that are implementable in the short- and medium-runs. Thus, the policy framework should give priority to managing and administering the existing capital stock in urban areas rather than focusing on the expansion of capital stock in new areas. Clearly, some policies will span the short- and medium-runs in their implementation phase, while others will have some flexibility in their implementation date with the outcome being determined primarily by political expediency. Thus, there will be a degree of subjectivity in assigning particular policy actions and investment programs to specific time horizons. Nevertheless, adoption of a systematic framework for formulating a national urban development strategy is necessary for three reasons: (a) the immediate scope for policy actions is greater than for investment programs. (b) some policy decisions will have to be taken in the very near future. A few of these will more likely influence the context of a viable urban development strategy (such as the general recovery of the economy) rather than become components of the urban development strategy itself; and (c) many of the major policy actions and investment programs designed to affect the long-term future will still have to be based on decisions taken within the lifetime of the present government. To the extent that the future of urban Peru is influenced by public policy, the present government has an unprecedented opportunity to act both to formulate policy objectives and strategy, and to take action to implement them to increase the welfare of urban and rural residents alike.

4.2 A systematic framework for formulating a selective and phased national development strategy can in part be based initially on the findings of this report. To improve the information base for delineating or revising policy and investment decisions a number of studies are proposed. The scope, timing, cost and review procedures for these studies can be firmed up later.

B. Proposals for Studies

4.3 Rational decision-making for urban development needs support in the form of information and analysis. This support is necessary even when decisions are based on political considerations since the economic and social costs and benefits of a particular policy decision have to be weighed alongside the political gains and losses. The suggestions for studies discussed here are relatively specific, intended as an aid to resolving some of the policy issues discussed earlier in the report. They are not necessarily confined to the scope of activities of the MVC, as some of the key issues in urban development involve other ministries and agencies since urban and regional planning is inevitably multisectoral planning.

(a) Urban Management and Finances

4.4 Most analysts agree that improved urban management and administration coupled with greater fiscal autonomy are the keys to more effective regional and local development. At present there is little ability at the subnational level to guide development or manage existing resources. The structure of subnational institutions (municipalities, the ORDES, the Departmental Development Corporations, etc.) as well as national institutions are in a state of flux pending implementation of the constitutional mandate to decentralize the government administratively. In particular, Article 262 of the new constitution does not explicitly assign new sources of revenues to whatever regional administrations eventually emerge (in the short run, the Departmental Development Corporations will re-emerge). Thus, in preparation for these changes, a study should be undertaken to review the existing and potential institutional responsibilities and roles in local and regional development, as well as the fiscal and human resource bases of these institutions. The primary objective of the study would not merely be the gathering of information but setting the objectives and clearly defining the roles and expenditure responsibilities of the various regional, metropolitan and local governments and how those relate to the new national sectoral agencies. This is necessary in order to design a strategy to make the regional and local administrations less dependent on the central government for planning, programming and financing of their expenditures and to improve their capacity to manage local and regional development. A part of this study should focus specifically on strengthening the capacity for metropolitan management in Lima.

(b) Development Potential in Secondary Cities and the Three Macro-regions (Costa, Sierra and Selva)

4.5 It would be unwise to allocate public investments, particularly for significantly expanding infrastructure services, among cities without a detailed assessment of their economic potential. Much of the debate about priorities for regional development in Peru rests upon unsupported assumptions about the relative attractiveness of the three main macro-regions. How these priorities are resolved will affect the distribution of public investment resources, both geographically and sectorally. There is obviously a large

amount of information on the economic potential of different areas in Peru, but much of it is scattered. On the other hand, the information available on economic and social conditions in the secondary cities is much sparser than in Lima itself. This study would assemble and interpret this information with the aim of quantifying, in broad terms, the comparative efficiency of investment--private and public--in the three macro-regions and their secondary cities.

4.6 This study will involve the appraisal of investment opportunities among sectors and for footloose activities, within sectors at different locations. Specific attention would be paid to: the performance of existing large-scale industrial plants and the potential for new plants; existing and prospective agro-based industries; and the extent of small-scale industries and an analysis of their problems. Assuming that job creation is an important policy goal, such a study could also examine the labor-absorptive capacity of each sector, (a) in total, (b) per unit of investment (both public and private), and (c) per unit of public expenditure. In addition, consideration could be given to choice of technology to examine if the labor intensity of a particular sector could be increased. 1/

4.7 The study would also review the strength of locational determinants and attractors in a selected set of cities. These determinants would include public services, the scale and quality of banking, financial and business services, social indicators and cultural amenities and the current levels of infrastructure (water supply, electricity, telecommunications, etc.).

4.8 The study would include a brief assessment of the needs and relative costs of expanding infrastructure in different cities as this would be valuable in the selection of an efficient national urban development strategy. 2/ It is not intended that this part of the study involve a major primary data gathering exercise. Instead, the study could draw heavily on data in public utility and other agencies and on information gathered for specific infrastructure projects at particular locations. It would not be too difficult to extrapolate from these to general infrastructure costs for cities as a whole, provided that some moderate margins of error are acceptable.

4.9 To make the scope of the overall study manageable, it would probably have to cover the three macro-regions and be restricted to the first ten to twelve cities in the urban hierarchy after Lima, including cities in areas of potential deconcentration north and south of Lima.

1/ Special attention could also be given to the potential for labor-intensive technologies in agriculture, both by crop and by location.

2/ The scope of the study could include specific cities (Lima, Arequipa, Trujillo, etc.) as well as urban size classes. The urban size class component would be important to assess the costs of expanding public services in the smaller towns, including those in the Sierra.

(c) Supplying Urban Shelter and Services

4.10 To facilitate a selective public intervention strategy it is necessary to study what is currently happening in the private and informal sectors insofar as supplying the high-, middle- and low-income housing markets is concerned, with a focus on the latter two. The descriptive review should not be totally comprehensive but should provide an adequate basis for delineating a role for the public sector in the system for delivering the shelter and services package.

4.11 A second part of this study would focus on innovations in housing finance, since the effective demand particularly but not exclusively for middle-class housing has been cut drastically by the high interest rates, rising construction costs and slow growth in incomes. In addition, the rates of interest paid to depositors have lagged behind general money market rates and have severely restricted the flow of funds into the housing finance sector. As argued earlier in the report, much could be done to alleviate the problems by allowing depositors' rates to adjust to money market rates and by "indexing" mortgage repayments to changes in prices or its equivalent-a rapidly adjusting variable mortgage rate on existing mortgages. More could be done by innovative methods of housing finance that reduce the carrying cost of house purchase in the early years (ensuring, of course, that these innovations do not undermine the "indexing" strategy). Experiments of this kind have been implemented in many countries with some success. These and other schemes (graduated mortgage payments, "balloon" mortgages, deferred payments schemes, etc.) should be reviewed to determine their transferability to the Peruvian institutional context.

4.12 A third part of this study would focus on methods of reducing housing standards and costs, particularly for low income housing. In recent years, the situation in low income areas, supplied primarily by self-construction, has deteriorated because of rapidly rising material costs and relatively stagnant real incomes,and because of a lag in the provision of basic services. One strategy to ameliorate the situation is to search for means of reducing urbanization costs. The emphasis in cost reduction should be on reducing standards such as increasing densities in new areas through smaller lots and narrower streets; and the use of cheaper materials, especially in Lima where bricks and mortar are the dominant materials. The success of this strategy will involve more technical assistance for self-help housing, and methods of increasing community participation (especially through labor contributions) in the provision of infrastructure and public services. The study should investigate feasible proposals on how this strategy for developing new areas can be implemented and complemented by strategies for upgrading "tugurios" and other inner city housing areas.

4.13 A final area to be reviewed in this study is the issue of urban land (including its acquisition, development and pricing). This review should also cover the types of land tenure available and means for streamlining the acquisition and formalization of tenancy and ownership rights in order to facilitate the public sector's ability to provide lots on a large scale in specified areas and thereby rationalize the spatial development pattern and lower the costs of urbanizing land.

URBAN AND REGIONAL DEVELOPMENT IN PERU: BACKGROUND

1. The purpose of this annex is to present a brief descriptive overview of urban and regional development in Peru, past, present and projected. The generalizations suggested by the data herein provide the basis for the short comments in Section II of the main report.

Population Growth

2. Urbanization has proceeded rapidly in Peru over the last forty years in association with faster economic growth, industrialization and modernization. The urban share in population increased from 35% in 1940 to 60% by 1972 (the last Census year) and is even higher today (Annex Table 1). The urbanization process has been dominated by the growth of Lima, whose share of national population increased from less than 10% in 1940 to more than one-quarter in 1980 (Annex Table 2). Its share in urban population has increased at a slower rate especially after 1961 when some of the major secondary cities grew faster than Lima.

3. Regional population growth rates in Peru reflect the huge differentials in urbanization among the three "natural regions" (the Coast, Sierra and Selva). Thus, the urban-dominated Coast has grown much faster, and will continue to grow faster, than the predominately rural Sierra (Annex Table 3). The Selva will grow even faster, but this in part reflects its very small initial population base (less than 10% of national population). Also, the central areas of the country will grow faster than other areas, because of the continued vigor of Lima and the fact that the Central Selva and the Central Sierra are the most rapidly developing parts of their respective regions.

4. Annex Table 4 shows estimates of population growth for the major urban systems of the country. They indicate a wide variety among these systems in their degree of urbanization (Lima, Arequipa, Trujillo-Chimbote and Chiclayo being more urban than the rest). Two sets of projections are presented: one an extrapolation of 1961-72 growth rates, the other the outputs of the Demographic Model of the National Urban Development Plan (1979), intended as a normative model. Basic features of this model are optimistic assumptions about rural population growth and a very wide spread in rural growth rates (from high positive to negative) among the urban systems. The extrapolations are more likely to reflect what is happening. In addition to Lima, there are several million-plus urban systems where population levels probably justify the growth of scale economy industries and high-order services: these are Trujillo-Chimbote, Piura, Chiclayo, Huancayo, Arequipa and Cuzco. In addition, Cajamarca is included in this group in the passive projection, while Ica and Huanuco are featured in the normative projection. The latter probably involves excessive expectations about the prospects of the

so-called "central urban system," 1/ especially in the Central Sierra. Interestingly, neither projection differs in its estimate of Lima's population in 1990, just short of 9 million.

Migration

5. There are substantial differentials in the rates of urban population growth and rural population growth. The average urban growth rate (in towns > 2000 population) increased from 4.2% in 1940-61 to 5.6% in 1961-72, while the average rural growth rate fell from 1.3% to 0.6%. Although the decline in mortality rates has been much faster in the cities, the main force fueling these growth rate differentials has been rural-urban migration. Annex Table 5 displays an interregional migration flows matrix derived from the 1972 Census of Population. The data show that the net flows have been dominated hy outmigration from the rural Sierra to the urban Coast, especially but not exclusively to Lima. Other features are that population polarized within the Coast towards Lima (though this trend was more than offset by inmigration from the Sierra) while the Selva experienced modest positive net migration flows from the other regions (except Lima-Callao), reflecting the expanding economic opportunities of the Selva.

6. Sample data for urban migration rates for 1970-75 are presented in Annex Table 6. These show strong net migration flows to Lima, Chiclayo and Trujillo. The other major cities were less successful in attracting net migrants, and a few experienced negative net migration (Piura, Cuzco and Arequipa). Although the rural areas experienced net outmigration, gross inmigration into rural areas was not negligible. This suggests some redistribution of the rural population in favor of areas with high economic development potential.

7. Projections of rural-urban migration up to the year 2000 (Annex Table 7) indicate approximate stability in the numbers migrating in each quinquennium, and this means a steady decline in the rates of rural-urban migration. Combined with evidence of a modest decline in urban fertility rates and a slowing down in the rate of mortality decline, this suggests that urban growth rates over the next twenty years will be somewhat lower than in the past. However, the rate of deceleration will not be fast enough to avoid a more than doubling of the urban population over the next two decades.

8. Annex Table 8 displays some projections of migration flows among urban systems between the Census year of 1972 and 1990. Since these projections are the output of a specific urban-regional forecasting model, they should not be treated too seriously. Nevertheless, the directions of flows are probably accurate. The results suggest that Lima-Callao will continue to pull in population from other urban systems in the country, especially from

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1/ See the main report, paras. 3.18 - 3.22.

Arequipa, Piura, Chiclayo and from the non-metropolitan urban system around Lima (e.g. Huanuco). Of course, this does not necessarily imply a decline in the populations of these other urban systems, since migration from rural areas will offset much of the loss while the major cities of these systems may continue to grow at the expense of the smaller towns in their hinterlands. The other main features of the projections are anticipated growth in the urban systems of the Selva (North Selva, Iquitos and Pucallpa) and the dynamism of the main urban system of the Central Sierra, Huancayo. If these forecasts are correct, urban growth over the next decade will not be as dominated as in the past by expansion on the coast. Nevertheless, continued polarization toward metropolitan Lima remains the most obvious feature of Peru's urban future.

Departmental Differentials

9. There are at least three ways of examining subnational patterns of development in Peru: by department, by natural region (Coast, Sierra and Selva), 1/ and by urban area. These are discussed in the next sections of this Annex.

10. Annex Table 9 presents data on population, degree of urbanization density and levels of basic public services by department. The departments differ very widely by population size, ranging from Lima at one extreme to Madre de Dios at the other; these differentials provide the rationale for the argument that regionalization for planning purposes should not be based on departmental boundaries. The wide differentials in interdepartmental population growth rates primarily reflect differentials in the level of urbanization. There is also a strong tendency for the more urbanized departments to be better provided with piped water and sewerage facilities.

11. The departments also differ widely in their economic structures (Annex Table 10). In many departments agriculture remains the dominant economic activity, in terms of contribution to gross area product, with Amazonas, Ayacucho, San Martin and Cajamarca accounting for the extreme cases. Mining is the key sector in several departments, overwhelmingly in Tacna and Pasco but it is also important in Huancavelica, Huanuco, Ica and Junin. The share of manufacturing is not highest in Lima, as superficial reasoning might suggest, but in Puno, Cajamarca, Cuzco, Ancash, La Libertad and Lambayeque. The explanation is, of course, the dominance of key service sectors in the primate city, especially commerce, financial and business services, and transport and

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1/ There are other ways of regionalizing the country. In various studies INP has used four macro-regions (north, central, south and east), and the regionalization schemes currently being discussed may generate a different set. However, the breakdown by "natural regions" is the most convincing in current circumstances.

communications. Annex Table 11 presents the same data in a different fashion, highlighting departmental shares in national sectoral output. These data show the expected dominance of Lima in urban-related sectors, especially commerce, financial and business services, transport and utilities. Lima accounts for more than one-half of sectoral outputs, except in agriculture, fishing, mining and construction. No other department absorbs more than 5% of total output, though Piura, La Libertad, Arequipa, Junin, Tacna, Lambayeque and Ancash account for more than 3%. Output per capita varies widely among the departments. Tacna leads the way (overwhelmingly) because of the high labor productivity of the mining sector. Lima stands in second place, with Ica, Pasco and Arequipa following (with approximately two-thirds of the output per capita of Lima). Of the latter cases, mining is a significant explanatory factor in Ica and Pasco.

Regional Differentials

12. Another useful way of examining subnational differentials in economic performance in Peru is in terms of the three main natural regions, the Coast, the Sierra and the Selva. The Coast is a relatively narrow strip (between 16 and 160 kilometers wide) occupying 11% of the area of Peru. It is arid, with the exception of the areas on the banks of the river valleys from the Andes to the Pacific. However, most of the urban population lives on the Coast, and it accounts for much of the nation's industry. Irrigated agriculture is also important, particularly for sugar cane and cotton. The Sierra is the region of the Andes, absorbing 27% of the land area and two-fifths of the population. Rainfall is high in the wet season. The dominant form of economic activity is subsistence agriculture, but mining is very important in some areas. The Selva region accounts for more than one-half of national territory, consisting of rainforests, hills and tropical jungle. This vast region is sparsely populated, served with a transportation network based on rivers and airlines. Its resources are largely undeveloped, but the high jungle area (Ceja de Selva) has considerable potential for coffee and tropical fruits while petroleum deposits have been discovered in several areas.

13. Annex Tables 12 and 13 present data on the regional distribution of labor force and employment by sector. Although not directly comparable, the two tables reveal common generalizations: the dominance of agricultural employment in the Sierra and of manufacturing on the Coast (though agriculture is equally as important in terms of absolute numbers employed); the concentration of mining in the Sierra, though its low employment potential is clear; and the much smaller contribution of the Selva to national employment. In addition, Annex Table 12 shows the concentration of service employment on the Coast while Annex Table 13 suggests that the direct labor-absorbing potential of the energy sector is even less than that of mining. Annex Table 14 displays more data on the regional distribution of manufacturing industry in terms of employment, number of firms, gross output and value added. They confirm the overwhelming dominance of the Coast in Peruvian industry. Annex

Table 15 sheds light on the regional distribution of agriculture. The data show that the Sierra accounts for over one-half of the country's cultivated land but only about two-fifths of gross agricultural output. The productivity of land on the Coast is about double that in the Sierra; as a result, the contribution of the Coast to gross agricultural output is approximately the same as that of the Sierra. The differentials in terms of labor productivity are even wider, since agriculture employment on the Coast is only about one-quarter of that in the Sierra (see Annex Table 13).

14. Given the dominance of agricultural activity in the Sierra, its low productivity and the fact that agriculture generates much lower levels of income than the other main economic sectors, it is not surprising that the Sierra is the poorest region in Peru. This is confirmed by Annex Table 16 which shows that average incomes in the rural areas of the Sierra are only one-third of those in the urban areas of the coast, and little more than one-fifth of those in Lima. Although wide gaps persist it should be noted that substantial proportions of the population live below the poverty level in all the regions of Peru. Although these proportions are especially high in other rural areas (the Selva, the rural areas of the Coast), they are far from negligible in Lima and the urban areas of the coast. The implication is that although the problem of rural poverty is very acute requiring priority attention via measures to stimulate rural productivity and (probably) more rural-urban migration, urban poverty should also be an object of public concern.

15. The data of Annex Table 16 suggests that an interregional equity case for bias in public investment would focus on the Sierra. Although the proportions of Annex Table 17 should be treated with caution (after all, they refer to only a single year), they suggest that, on the contrary, the Sierra has been discriminated against in public investment. In no major sector of public investment has the Sierra received a share equivalent to its share in population. In agriculture (its dominant economic activity) and in housing and social services (the sector most likely to be associated with direct improvements in human welfare), the Sierra's share is smallest of all. Although it is common to refer to the pro-urban bias of public investment in Peru, it is significant that the Selva has received the highest priority relative to its population share, especially in the industrial sector (including energy) and in transportation. Moreover, although almost all the public investment in housing, health and education has been undertaken in the Coast, this region has also accounted for most public investment in agriculture, a reflection of the high cost of irrigation projects but hardly support for the urban bias hypothesis.

Urban Differentials

16. As indicated earlier, the urban scene in Peru is overwhelmingly dominated by Lima. For example, the data of Annex Table 18 show that industrial employment in Lima is more than four times the level in the next twelve

most important industrial cities put together. On the other hand, the productivity of labor (as measured by value added per employee) is not especially high in Lima, perhaps because of the well-known concentration of small-scale industries in large cities explained by the critical importance of external economies for these industries. However, the high value added of certain urban areas is due to specialization in particular sectors such as mining (La Oroya) and sugar (Casagrande).

17. Annex Table 19 presents a variety of data on economic and social indicators for 23 cities with populations larger than 30,000 in 1972. These data refer to population size and growth rates, the contribution of government to employment, hotel beds, telephones, basic services (drinking water and sewerage) and higher education. The value of these diverse data is to suggest potential candidates as priority secondary cities in a national urban development strategy aimed at slowing down the growth of Lima. This is because several of these indicators are relevant to an assessment of how these cities might function as "social development poles," 1/ probably a major determinant of their success in attracting migrants from other areas and in decentralizing economic activity from Lima. Although there is no across-the-board uniformity in the rankings on these indicators, certain cities stand out for consideration. These include Arequipa, Ica, Puno and Cuzco. Surprisingly, some of the larger cities such as Trujillo, Chiclayo, Chimbote and Piura do not fare very well. Moreover, the rapidly growing cities of the Selva (especially Pucallpa but also Iquitos) are severely deprived in terms of social infrastructure. Also, one or two of the cities located in rural regions (e.g. Cajamarca, Ayacucho) come out unexpectedly well. However, any assessment of which cities deserve priority in a national urban development strategy would require a much more detailed analysis of the comparative economic potential of the prime candidates.

1/ This concept was introduced by John Friedmann. It is based on the idea that sociological factors (e.g. the presence of a business class and professional elite) could be an important determinant of the success of a growth pole.

Annex Table 1: URBAN AND RURAL POPULATION, 1940, 1961, and 1972
('000)

	1940	%	1961	%	1972	%
Urban	2,197.1	35.4	4,698.2	47.4	8,058.5	59.6
Rural	4,010.8	64.6	5,208.6	52.6	5,479.7	40.4
Total	6,208.9	100.0	9,906.8	100.0	13,538.2	100.0

Source: Census of Population, 1972.

Annex Table 2: LIMA'S POPULATION SHARE, 1940-90

Year	Share of Urban Population (%)	Share of National Population (%)
1940	36.0	9.7
1961	42.6	17.1
1972	43.9	23.3
1980	41.2	27.7
1990	42.4	31.3

Sources: 1940-72, Census of Population, 1980 and 1990, INP estimates.

Annex Table 3: PROJECTED RETIONAL POPULATION GROWTH RATES, 1972-90
(%)

	North	Central	South	East	Country
Coast	3.6	3.8	3.4	-	3.7
Sierra	0.1	2.1	1.6	-	1.3
Selva	4.6	6.2	2.3	2.8	4.1
Country	2.5	3.3	1.8	2.8	2.7

Source: INP, Diagnostico de la Realidad Nacional, Vol. II (February 1980), p. 485.

Annex Table 4: URBAN SYSTEM POPULATION PROJECTIONS, 1990
('000)

Urban System	Pop. (1972)	Passive Pop. (1990)	Passive %Urban	Passive Rate(%)	Normative /a Pop. (1990)	Normative /a %Urban	Normative /a Rate(%)
Trujillo-Chimbote	795.7	1697.7	93	7.9	2562.0	82	7.4
Piura-Sullana-Tumbes	931.5	1402.6	70	4.1	1669.5	68	4.4
Chiclayo-Chepen	651.0	1147.7	84	5.0	1913.9	56	4.9
Bagua	346.2	892.3	24	4.6	675.9	32	4.5
Cajamarca	826.8	1024.8	20	2.3	755.7	31	2.9
Tarapoto	259.2	418.7	61	2.9	546.0	49	3.2
Huancayo-La Merced-Ayacucho	1320.8	1920.0	59	4.3	2134.5	47	3.1
Ica	531.0	732.1	81	4.8	1340.8	45	3.6
Huaraz-Caraz	525.8	585.6	32	1.8	502.5	36	1.4
Huanuco-Cerro de Pasco	584.3	849.3	62	5.5	1258.2	33	4.0
Arequipa-Tacna	684.4	1165.2	93	5.0	1484.8	89	5.1
Puno-Huancane	776.2	945.1	36	3.8	972.8	41	4.4
Cuzco	1050.0	1301.4	42	2.7	1233.7	51	3.3
Iquitos	288.2	517.0	70	6.1	731.1	74	7.7
Pucallpa	163.2	354.2	67	6.8	400.9	81	8.0
Lima	3803.9	8998.8	98	5.6	8967.0	96	5.0

/a Normative projections are obtained from the Model Demografico del Plan Nacional de Desarrollo Urbano (April 1979).
Source: MVC, Plan Nacional de Desarrollo Urbano a 1990: Estimados de Poblacion a Largo Plazo (August 1980).

Annex Table 5: INTERREGIONAL MIGRATION FLOWS, 1972
('000)

From/To	Coast	Sierra	Selva	Lima-Callao	Total	Net Migration
Coast	-	64.4	23.5	413.5	501.4	81.7
Sierra	496.3	-	193.9	907.0	1,597.2	-1,477.3
Selva	18.3	25.7	-	78.0	122.0	104.9
Lima-Callao	68.5	59.8	9.5	-	137.8	1,260.7
Total	583.1	149.9	226.9	1,398.5	2,358.4	

Source: INE, Documento de Trabajo.

Annex Table 6: URBAN ANNUAL MIGRATION RATES (%)

		In-Migration	Out-Migration	Net Migration	Migration Efficiency Index /a
Lima		3.5	1.6	1.9	37
Arequipa		3.7	3.8	-0.1	-1
Trujillo		7.4	4.6	2.8	23
Chiclayo		14.2	7.8	6.4	29
Chimbote		10.0	9.0	1.0	5
Piura		6.8	7.3	-0.5	-4
Cuzco		3.1	3.3	-0.2	-2
Huancayo		5.4	5.3	0.1	1
Iquitos		8.5	7.9	0.6	4
Cities, 20,000 to 100,000		4.1	3.6	0.5	6
Cities (<20,000)	(a)	3.6	5.2	-1.6	-18
	(b)	3.1	2.6	0.5	9
Rural Areas	(a)	0.9	1.8	-0.9	-33
	(b)	1.3	1.5	-0.2	-1
Total		3.9	3.9	0.0	-

/a Migration efficiency index = $\frac{\text{Net migration}}{\text{Inmigration + Outmigration}} \times 100$

Source: Encuesta Demografica Nacional, 1975.

Annex Table 7: PROJECTED RURAL-URBAN MIGRATION RATES

Period	I Projected rural-urban migration /a (´000)	II Population /b (´000)	I/II (%)
1970-75	810.7	15,470.0	5.24
1975-80	732.6	17,779.5	4.12
1980-85	757.8	20,401.4	3.71
1985-90	782.5	23,322.9	3.36
1990-95	802.5	26,481.0	3.03
1995-2000	816.8	29,795.3	2.74

/a ONEC, Boletin de Analisis Demografico, No. 20, 1978.

/b End of period estimates, ONE-DGCED-DD, DGE de Trabajo No. 10.

Annex Table 8: PROJECTED NET MIGRATION FLOWS BETWEEN URBAN SYSTEMS, 1972-90 ('000)

Urban System	Net Migration	Origins		Destinations	
Piura	-336.0			Lima-Callao	336.0
Chiclayo	-539.0			Lima-Callao	276.1
				N. Selva	160.1
				Iquitos	102.7
N. Selva	160.1	Chiclayo	160.1		
Trujillo	-199.9			Iquitos	199.9
Lima/Huanuco	-993.2			Lima-Callao	414.4
				Huancayo	297.8
				Pucallpa	281.0
Ica	-76.6			Lima-Callao	76.6
Huancayo	297.8	Lima/Huanuco	297.8		
Arequipa	-448.8				
Pucallpa	281.0	Lima/Huanuco	281.0		
Iquitos	302.6	Chiclayo	102.7		
		Trujillo	199.9		
Lima-Callao	1,551.8	Piura	336.0		
		Chiclayo	276.1		
		Lima/Huanuco	414.4		
		Ica	76.7		
		Arequipa	448.8		

Source: INP, Plan Nacional de Ordenamiento de Los Recursos Hidraulicos - Modelo Perspectiveo (May 1980).

Annex Table 9: POPULATION, URBANIZATION AND BASIC SERVICES BY DEPARTMENT

Department	1961	1972	1980	Growth Rate 61-72	% Urban 1972	Density, 1972 Hab/km²	Water Supply, 1978 (%)	Sewerage 1978 (%)
Amazonas	118	195	304	4.7	34	5	21	8
Ancash	582	726	903	2.0	47	21	29	61
Apurimac	288	309	338	0.6	23	15	12	24
Arequipa	389	530	715	2.9	82	9	70	64
Ayacucho	411	457	536	1.0	33	11	24	7
Cajamarca	747	919	1112	1.9	18	27	20	9
Prov. C. Callao	214	321	436	3.6	99	2247	85	78
Cuzco	612	715	858	1.4	36	10	39	30
Huancavelica	303	332	374	0.8	21	16	22	5
Huanuco	329	415	506	2.2	27	12	24	11
Ica	256	357	481	3.1	72	18	70	30
Junin	521	696	897	2.6	60	17	51	19
La Libertad	582	784	1001	3.0	59	35	50	45
Lambayeque	342	516	713	3.8	73	40	51	45
Lima	2031	3473	5101	5.0	94	106	65	56
Loreto	337	495	675	3.6	50	1	27	19
Madre de Dios	15	21	25	3.5	43	0.3	17	15
Moquegua	52	75	104	3.4	71	5	50	30
Pasco	138	177	213	2.3	60	8	54	15
Piura	669	855	1063	2.3	52	24	52	32
Puno	686	776	900	1.2	24	11	27	31
San Martin	162	224	299	3.0	59	4	19	8
Tacna	66	96	131	3.5	80	7	67	46
Tumbes	56	75	99	2.7	74	17	55	30
Total	9907	13538	17780	2.9	60	10	48	34

Sources: Census 1961 and 1972.

1980 estimates from INP-ONR-DGCED-DD, DGR de Trabajo No. 10.

Services estimates from MVC-DGOS. Water supply estimates include standpipes.

Annex Table 10: DISTRIBUTION OF INDUSTRIAL OUTPUT BY DEPARTMENT, 1977 (%)

Departments	Agriculture	Fishing	Mining and Quarrying	Manufacturing	Utilities	Construction	Commerce	Transport and Communications	Financial and Business Services	Social and Personal Services
Amazonas	52.1	0	0	25.6	0	1.6	2.5	4.0	5.7	8.6
Ancash	23.5	5.5	4.7	37.5	0.5	4.2	4.2	5.6	7.9	7.0
Apurimac	49.7	0	0.2	24.5	0	4.9	0.8	4.6	6.5	8.8
Arequipa	19.0	1.1	9.3	25.0	1.5	7.1	11.8	6.7	10.2	10.4
Ayacucho	45.4	0	3.7	25.4	0.6	2.2	1.5	4.7	7.9	8.7
Cajamarca	37.9	0	5.2	38.8	0.6	2.8	1.4	3.2	4.7	5.4
Cuzco	22.7	0	1.1	38.5	1.0	3.3	7.0	5.3	11.2	9.8
Huancavelica	21.9	0	39.8	19.4	0	8.5	0.4	2.9	2.8	4.2
Huanuco	31.8	0	23.1	19.4	0	3.5	3.4	4.3	7.9	6.7
Ica	21.1	3.0	20.8	20.4	0.7	1.9	8.3	5.5	11.5	7.0
Junin	22.2	0.1	18.4	25.3	2.1	4.8	6.7	4.7	8.3	7.6
La Libertad	24.0	0.7	2.3	36.6	0.1	5.2	7.4	5.2	10.4	8.1
Lambayeque	19.0	0.8	0.2	35.0	0.8	7.6	15.1	4.5	9.5	7.8
Lima	5.2	0.3	1.4	29.8	1.3	2.3	23.4	9.2	13.2	9.1
Loreto	27.3	1.4	4.1	23.2	0.8	11.7	10.6	6.7	6.6	7.7
Madre de Dios	22.7	0	0	24.0	0	17.7	2.5	3.5	21.9	7.7
Moquegua	22.7	7.8	0	32.9	0	7.2	5.5	7.3	7.8	10.8
Pasco	16.9	0	62.4	8.6	0	0.5	1.6	3.0	3.4	3.4
Piura	17.4	4.1	13.8	29.2	0.6	10.3	7.2	4.9	5.9	6.4
Puno	19.1	0.04	4.2	47.9	0.6	3.9	4.4	4.3	7.2	8.4
San Martin	40.8	0	0.1	14.5	0	15.6	7.0	4.0	7.0	10.9
Tacna	6.0	0.04	80.8	3.3	0.4	0.5	2.4	1.2	2.3	3.1
Tumbes	18.6	9.6	0	20.2	0	10.2	6.0	7.5	11.1	16.9
Peru	13.6	0.8	8.1	28.7	1.0	3.8	15.4	7.1	13.2	8.3

Source: Direccion General de Cuentas Nacionales, Indicadores Macroeconomicos por Departmentos: Producto Bruto Interno de Las Industrias, 1970-77 (1979).

Annex Table 11: DEPARTMENTAL DISTRIBUTION OF OUTPUT, 1977 (%)

Department	Agriculture	Fishing	Mining and Quarrying	Manufacturing	Utilities	Construction	Commerce	Transport and Communications	Financial and Business Services	Social and Personal Services	Total	GDP per capita
Amazonas	2.15	0	0	0.50	0	0.23	0.09	0.32	0.24	0.58	0.56	8,387
Ancash	5.41	21.66	1.82	4.10	1.64	3.47	0.85	2.51	1.88	2.66	3.16	14,957
Apurimac	2.14	0	0.02	0.50	0	0.75	0.03	0.38	0.29	0.62	0.55	7,071
Arequipa	5.57	5.62	4.57	3.20	5.63	7.37	3.05	3.80	3.08	5.01	3.99	24,409
Ayacucho	3.40	0	0.46	0.90	0.60	0.59	0.10	0.67	0.61	1.07	1.02	7,942
Cajamarca	7.42	0	1.71	3.60	1.59	1.96	0.25	1.21	0.95	1.72	2.66	10,131
Cuzco	3.74	0	0.31	3.00	2.20	1.94	1.01	1.69	1.90	2.64	2.24	10,964
Huancavelica	1.67	0	5.09	0.70	0	2.30	0.03	0.43	0.22	0.53	1.04	11,405
Huanuco	3.12	0	3.80	0.90	0	1.22	0.29	0.81	0.80	1.07	1.33	11,181
Ica	4.59	11.11	7.60	2.10	1.96	1.44	1.59	2.29	2.59	2.48	2.96	27,002
Junin	6.48	0.03	8.97	3.50	7.99	5.00	1.72	2.62	2.49	3.61	3.96	19,173
La Libertad	7.60	3.80	1.23	5.50	0.39	5.90	2.08	3.16	3.39	4.21	4.31	18,643
Lambayeque	4.81	3.33	0.10	4.20	2.61	6.82	3.37	2.17	2.42	3.24	3.44	21,452
Lima	19.84	16.80	9.07	54.30	67.62	30.86	79.39	68.09	72.23	57.63	52.37	42,774
Loreto	5.96	5.09	1.50	2.40	2.25	9.09	2.03	2.80	1.49	2.77	2.97	19,102
Madre de Dios	0.20	0	0	0.10	0	0.56	0.02	0.06	0.20	0.11	0.12	19,070
Moquegua	0.73	4.27	0	0.50	0	0.82	0.10	0.45	0.26	0.57	0.44	18,701
Pasco	1.66	0	10.25	0.40	0	0.16	0.14	0.56	0.34	0.59	1.33	26,377
Piura	6.04	24.58	3.03	4.80	2.73	12.76	2.21	3.28	2.12	3.66	4.72	18,953
Puno	3.19	0.13	1.16	3.80	1.35	2.35	0.65	1.38	1.25	2.30	2.28	10,318
San Martin	2.37	0	0.01	0.40	0	3.24	0.36	0.45	0.42	1.04	0.79	11,589
Tacna	1.52	0.16	34.31	0.40	1.45	0.41	0.53	0.57	0.59	1.29	3.45	116,33
Tumbes	0.40	3.42	0	0.20	0	0.76	0.11	0.30	0.24	0.58	0.28	12,475
Peru	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	24,491

Source: Direccion General de Cuentas Nacionales, Indicadores Macroeconomicas por Departmentos: Producto Bruto Interno de Las Industries, 1970-77 (1979)

Annex Table 12: LABOR FORCE BY SECTOR AND REGION, 1972
('000)

Region	Agriculture and Fishing	Mining	Manufacturing	Services	Total
Coast	313.9 (20.0)	15.5 (29.8)	313.1 (67.0)	1,094.6 (69.8)	1,737.0 (47.5)
Sierra	1,029.9 (65.8)	33.6 (64.5)	135.2 (28.9)	384.5 (24.5)	1,583.2 (43.3)
Selva	222.4 (14.2)	3.0 (5.8)	19.2 (4.1)	88.1 (5.6)	332.8 (9.1)
Total	1,566.2 (100.0)	52.1 (100.0)	467.6 (100.0)	1,567.2 (100.0)	3,653.0 (100.0)

Source: Censo Nacional de Poblacion y Vivienda, 1972.

Annex Table 13: REGIONAL DISTRIBUTION OF EMPLOYMENT, 1974
('000)

Region	Agriculture	Fishing	Mining	Fuels	Industry	Total
Coast	273.5 (14.1)	24.5 (1.3)	-	0.6 (0.03)	240.6 (12.3)	539.2 (27.7)
Sierra	1,081.6 (55.0)	-	41.5 (2.1)	-	18.2 (0.9)	1,141.4 (58.6)
Selva	257.2 (13.2)	-	-	4.0 (0.2)	7.1 (0.4)	268.4 (13.8)
Total	1,612.3 (82.7)	24.5 (1.3)	41.5 (2.1)	4.6 (0.2)	265.9 (13.6)	1,949.0 (100.0) /a

/a Figures are rounded.

Source: INP, Diagnostico, op. cit., p. 584.

Annex Table 14: REGIONAL DISTRIBUTION OF INDUSTRY, 1974

Region	No. of firms	%	Employment	%	Gross output (m. soles)	%	Value added (m. soles)	%
Coast	6,329	81.5	216,615	87.0	187,977	83.9	84,044	85.3
Sierra	683	8.8	18,182	7.3	27,322	12.2	10,530	10.7
Selva	333	4.3	6,651	2.7	3,052	1.4	1,502	1.2
Unidentified	420	5.4	7,635	3.1	5,722	2.6	2,741	2.8
Total	7,765	100.0	249,083	100.0	224,073	100.0	98,817	100.0

Source: INP, Diagnostico, op. cit., p. 570.

Annex Table 15: AGRICULTURAL LAND AND OUTPUT BY REGION, 1975

	Coast	Sierra	Selva
Cultivated land ('000 ha)	635.2	1,244.4	524.4
(%)	(26.5)	(52.0)	(21.5)
Gross output (m. soles)	26,310.4	26,366.3	11,695.4
(%)	(40.9)	(40.9)	(18.2)
Output per hectare (10^3 soles/ha)	41.4	21.2	19.0

Source: INP, Diagnostico, op. cit., p. 516.

Annex Table 16: PRICE ADJUSTED REGIONAL POVERTY MEASURES, 1971
(soles)

	Peru	Lima	Coast	Sierra	Selva	Urban Coast	Rural Sierra
Absolute Poverty Income Level	2869	5172	3825	1739	2222	4187	1591
% of Population with incomes below poverty level	28.0	3.1	20.5	35.8	28.6	12.3	41.4
Median Income of Poor	1342	3926	2730	847	1231	2597	755
Poverty Gap	1527	1246	1095	892	991	1590	836
Gap as % of Median Income of Poor	114	32	40	105	81	60	111
Poverty Index /a	32	3	8	38	23	8	46
Average Income	9400	20000	9205	4681	6605	12300	4100
Regional Index of Average Income (Peru = 100)	100	213	98	50	70	131	44

Source: V. Thomas, "Spatial differences in poverty: the case of Peru," Journal of Development Economics, 7(1980), Table 4.

/a The poverty index is calculated as $\frac{N_1}{N} \cdot \frac{\hat{Y} - \bar{Y}}{\bar{Y}}$, where N = total population, N_1 = number of people in poverty, $\hat{Y}$ = poverty line and $\bar{Y}$ = median income.

Annex Table 17: REGIONAL DISTRIBUTION OF PUBLIC INVESTMENT, 1977-8 (%)

	Coast	Sierra	Selva
Agriculture	86	9.5	4.5
Industry and Mining	49	22	29
Electricity and Transportation	52	29	19
Housing, Health and Education	96	1.5	2.5
Total	60	21	19
Population Distribution, 1972	47	43	10
Projected Population Distribution, 1980	55	35	10

Source: USAID, Peru: Project Paper, Integrated Regional Development (1980).

Annex Table 18: INDUSTRIAL ACTIVITY IN MAJOR URBAN INDUSTRIAL CENTERS, 1974

	Employment ('000)	Value Added (m. soles)	Gross Output (m. soles)	Value Added per Employee ('000 soles)
Lima-Callao	179.76	63,187	143,336	352
Arequipa	8.65	2,782	8,225	322
Chimbote	6.64	4,107	7,334	619
Chiclayo	4.82	2,835	5,364	588
Trujillo	4.54	965	2,493	213
La Oroya	3.07	6,087	15,130	1,984
San Luis	2.97	922	2,145	311
Talara	2.95	2,042	6,040	693
Pucallpa	2.64	531	1,144	201
Casagrande	2.31	3,904	5,903	1,689
Barranca	2.10	1,400	2,844	677
Piura	1.44	559	1,858	389
Saña	1.01	1,049	1,617	1,043

Source: INP, Diagnostico, op. cit., p. 574.

Annex Table 19: URBAN SOCIOECONOMIC INDICATORS

	Population, 1972 ('000)	Public Administration's Share in Service Employment (%)	Hotel Beds per 1000 Pop., 1978	Telephone Subscribers per 1000 Pop., 1977	% of Pop. with Drinking Water, 1972	% of Pop. with Sewerage, 1972	Percentages of 15-24 Population in Higher Education, 1972
Metropolitan Lima	3,254.8	30	3.8	48.9	76	64	9
Arequipa	312.7	26	6.0	26.6	61	51	14
Trujillo	265.9	35	5.4	10.7	53	31	8
Chiclayo	219.3	43	6.5	11.4	44	40	4
Chimbote	174.3	32	3.7	6.2	31	29	1
Cuzco	130.4	42	23.3	22.4	69	47	12
Piura	145.0	53	4.0	13.6	64	34	4
Huancayo	136.0	37	9.5	10.7	57	37	8
Iquitos	109.6	48	7.2	13.8	59	47	5
Ica	84.2	61	11.9	14.8	52	41	10
Sullana	95.5	26	3.1	5.2	31	20	5
Tacna	59.7	27	11.4	25.1	75	46	6
Pucallpa	57.2	86	8.3	10.9	3	8	[illegible]
Cerro de Pasco	55.2	48	1.8	5.5	47	22	4
Chincha	53.3	31	7.0	8.4	51	35	3
Huacho	51.5	41	8.5	13.9	49	37	4
Pisco	41.1	75	11.7	13.9	50	38	5
Ayacucho	45.0	52	9.4	10.4	60	31	22
Huanuco	41.6	45	25.4	16.2	76	61	9
Cajamarca	39.8	62.	12.7	22.4	63	38	14
Juliaca	39.4	38	8.1	8.0	23	17	5
Puno	41.6	53	8.5	13.7	53	35	18
Tarapoto	30.4	87	3.4	0.0	38	11	1

Source: Estimates of Project 02, INP-ONERN.

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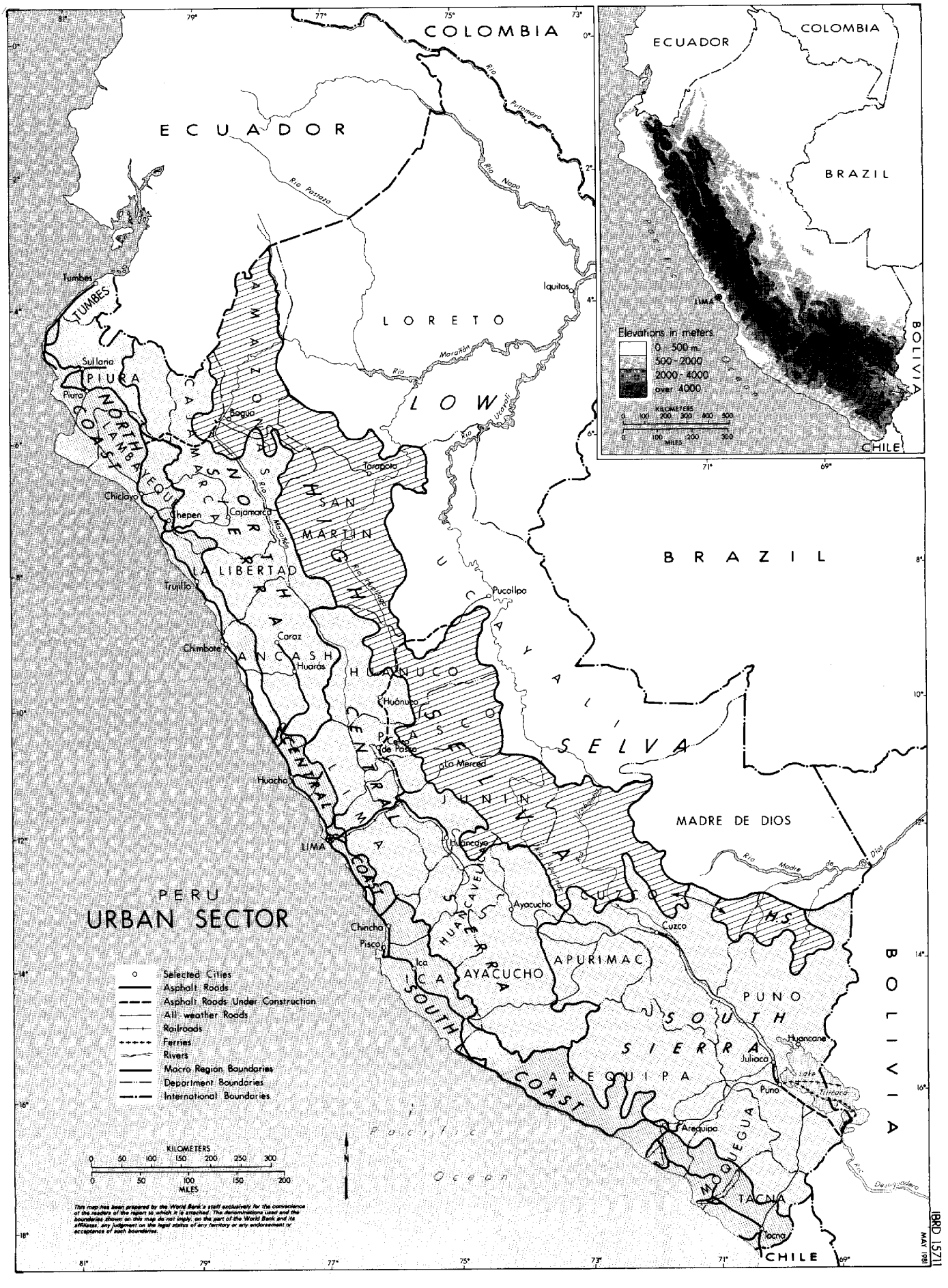
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