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# THE ECONOMIC REGIONS OF ECUADOR, THEIR INTEGRATION AND DEVELOPMENT

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Prepared for de Government of Ecuador
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Appointed by the
United Nations Bureau of Technical Assistance Operations

Note: This report has not been cleared with the Bureau of Technical Assistance Operations of the United Nations, which does not, therefore, necessarily share the views expressed.

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## INTRODUCTORY NOTE

In this study a first attempt is made to describe the economic regions of Ecuador as regards their geographical location as well as their main economic features. A great deal of spade work had to be done before a reasonably clear picture of regions and regional circumstances could be obtained. Nevertheless, many important data about the economic regions are still lacking. These gaps may be filled up in the course of time when more and better statistics will be available.

As the present report is concerned mainly with the drafting of a regional economic policy, there is no need for a detailed discussion of all geographical aspects of the various regions. The course of the border lines between the regions that will be distinguished is for obvious reasons a disputable matter; more refined analysis on this point will probably lead to several corrections of the regional frontiers proposed in the present study.

All figures of a statistical nature given in this report are estimates subject to a high margin of error. Most of them were calculated by the author from basic information and statistics provided by several institutions, first of all by the Technical Department of the Junta Nacional de Planificación y Coordinación Económica, Quito. Responsability for these estimates remains entirely with the author.

# THE ECONOMIC REGIONS OF ECUADOR, THEIR INTEGRATION AND DEVELOPMENT

## 0. Introduction

In recent years interest in the regional aspects of development planning in under-developed countries has greatly increased. Nevertheless there is as yet not such a thing as a general theory of or a standard approach to regional economic development. A study of the interrelation between national economic planning and regional development programmes cannot be based, therefore, upon a body of established methods and previous experiences in this field. Moreover, with respect to the economic regions that may be distinguished in the Ecuadorian economy, a general and systematic analysis has never been made before. The present study, for both reasons, cannot be more than a first attempt in this direction.

## A. A GENERAL APPROACH AND A METHOD OF ANALYSIS

### 1. Terminology

1.1. First of all, we have to say what is meant by the words "integration" and "economic region". For the purpose of this study we will understand by "economic region" a geographical part of a country, which part has internally a good deal of unity or similarity, but shows on the other hand striking differences with the surrounding parts in economic structure and situation. Admittedly, this is a very loose description. The well-known theoretical definition would be: the factors of production are mobile within but immobile outside the region; products move freely within the region but meet some sort of a barrier when leaving the region. In reality things are more complicated, and definitions less rigid. Still, the elements of the theoretical definition are by no means completely absent in the first description of an economic region. They do hold true, but only to a certain extent; they should be kept in mind for a good understanding of the problem.

1.2. As to the word "integration", this will mean on the one hand, negatively, the removal of all obstacles and barriers that split

up the economy into a great number of small compartments, and on the other hand, positively, all measures required to get each region to play the best role it can play in economic development. The latter aspect will also be referred to in the text as balanced regional development. Again, in theoretical terms integration means the creation of one market both for products and factors of production, which can move freely within the country as a whole; it should be noted that the word "freely" in this definition does not exclude the possibility of governmental measures designed to influence the actual direction of such movements. Also, it is worth mentioning that integration not only refers to an economic unification of various regions, but also to an amalgamation of the economic activities of different social classes within the regions. The latter process might be called vertical integration, whereas the former can be described as horizontal integration.

## 2. Economic regions and regional differences

2.1. Before we turn to the subject of integration and economic development, we will analyse briefly the various causes of regional economic differences. In other words: we will try to explain why usually economic regions do exist within a country, and why they renerally have different per caput incomes. The reasons differ, of course, from region to region; not all factors listed below will be present in each and every individual case.

The factors creating regions and regional differences may be summarized under five headings: natural, human, institutional, political and economic factors.

2.2. Natural factors

Obviously the physical characteristics of the various parts of the country play an important role in the explanation of the regional setting. First of all, the endowment with natural resources, like a fertile soil, forests, mineral deposits, etc., will be different from area to area. Climatic conditions are not the same everywhere, nor are the possibilities of irrigation or soil conservation. Moreover, the accessability of an area and the ways of communication with other parts of the country are determined

to a large extent by natural circumstances.

2.3. Human factors.

A well-known factor in this respect is the difference in productive capacity between the people from different regions; the actual significance of this point will be greater to the extent that the population is less homogeneous as regards origin and level of education. The difference may be of an over-all character, or exist only regarding special skills; it may demonstrate itself in labour productivity, or in the entrepreneurial skill. Besides differences in productive capacity there are differences in the "preference schedules", usually coinciding with racial or tribal differences. This is especially important regarding the relative value attached to leisure by the various population groups; one group of people may increase their productive efforts only if a very strong economic incentive exists, whereas the population of another region asks for not more than a modest reward.

2.4. Institutional factors.

The institutional framework in which the regional economic operate is often not the same all over the country. There is, for example, the contrast between the money economy on the one hand and the barter economy, in which auto-consumption dominates, on the other. In addition, labour relations differ also, especially in agriculture; wages are paid in money or in kind (sharcroppers); sometimes compensation for labour services is given in still other forms, like e.g. to the huasipunguero. In general, tradition is the source of many institutional differences.

2.5. Political factors.

There are several factors in the political field that tend to create regional differences. Taxes are raised all over the country, but government expenditure may be distributed less evenly. A good deal of the expenses are made on the government machinery concentrated in the administrative centre of the nation. Moreover, in newly-developing countries investment in industry and its infrastructure are often directed to one or two areas with great locational advantages. Frontier areas, on the other hand, are sometimes neglected by the government, even as regards their primary needs; in addition, they may be orientated more towards

co-operation with the neighbouring country than with the nation itself. Another factor causing regional diversification is found in the differences in policy at the lower government level; this presupposes, of course, some degree of local autonomy.

2.6. Economic factors.

All the factors mentioned above have economic consequences; they constitute therefore as many causes of regional economic differences in a country. There are, in addition, purely economic factors that play a role in this respect. First of all, shipping costs limit the size of the market, thus creating various centres of production for the same commodity. This tendency is strengthened by the desire to diversify production. These two points explain why there are regional markets within a country, at least for a number of products. They do not explain, however, the differences in regional economic situation. These differences are caused by a tendency opposite to the above ones, i.e. by specialization. The more a region is specialized in the production of a particular commodity, the stronger its economy will be influenced by a change in the market conditions for this product. As demand does not grow at the same rate for all goods, and as production costs behave differently in different industries, differences in economic activity are bound to arise between areas specialized in different industries. In other words: the "terms of trade" of the various parts of the country will, generally speaking, neither be constant nor move at the same rate in the same direction. Especially regions producing for the world market will be susceptible to changes in market conditions. Besides these primary reasons for differences in economic development between regions, another economic fact should be borne in mind. A higher level of income in a certain region will allow a higher level of investment; a higher rate of capital formation causes a higher rate of increase in income; and so on. Once a region is in a better position that another one, there is a good chance that it will be better off for some time in the future as well. This point is discussed more fully later on.

3. The target of economic development policy

3.1. From the brief review of the main factors leading to the formation of economic regions and regional differences it will be clear

that usually many factors are working at the same time, partly reinforcing partly counteracting each other. It is difficult therefore to say beforehand if in the course of time differences will increase or decrease. According to some uthors 1/ there is evidence that in general the free play of economic forces tends to widen the gap between regions of different level of development and per caput income. Anyhow we may take it for granted that the differences will be of a lasting character unless deliberate action is taken to combat them. Now the question is: should this action be taken, yes or no? To answer the question, let us consider for a moment the target of economic development.

3.2. According to article 55 of the Charter of the United Nations, the policy of a member state should be "to promote higher standards of living, full employment, and conditions of economic and social progress and development". Participation in the Expanded Programme of Technical Assitance implies that the aim will be "the attainment of higher levels of economic and social welfare for (the) entire population". For a country which is a member of the United Nations, amongst the targets of economic development policy there should be the following aims:

i) Higher income for all people, i.e. everybody should participate in an increase in national income;

ii) Full employment, i.e. labour for everybody who is willing to work;

iii) Conditions of economic and social progress, i.e. everybody should have the greatest possible opportunity to develop and use his personal faculties in the optimal way.

3.3. Obviously the existence of a great number of more or less isolated regions of different level of development and different economic outlook is incompatible with the target or targets of economic development in the above sense. Firt, the fact that the national economy is splitted up into a number of badly communicating regional economies is a serious handicap in increasing national income at a reasonable rate, as the factors of production do not move to the spot where their productivity would be

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1/ See e.g. Gunnar Myrdal, Economic theory and underdeveloped regions. London, Duckworth, 1957.

highest nor economies of large scale production can be obtained. Second, the whole population should participate in the improvement of economic and social conditions, and not onby the inhabitants of the better-off or more favourable regions; it cannot be accepted, therefore, that in the weaker regions regional per caput income always lags hebind, that open or disguised unemployment persists in those regions, and that chances and means of development have to be found entirely within the region itself.

3.4. The study of economic regions and their development is, for the reasons outlined above, an essential part of the preparations for any development programme of national plan. Amongst the final aims of a plan designed to develop a nation's economy, the integration of the various regional economies and the realization of regional balance in development have to play a major role. We will examine in some detail in what way these objetives are tied in with a development programme. Before that, let us consider how integration can be realized and what the effects of it will be.

## 4. The integration process and its consequences

4.1. Describing the meaning of the term integration, two different points were mentioned, a "negative" and a "positive" aspect. In the "negative" sense integration consists in the removal of all obstacles and barriers that split up the economy into a great number of small compartments. For the moment, the discussion will be confined to this point.

4.2. How can the regional economies of a country be amalgamated into one national economy? This depends, of course, upon the circumstances taht created the region, that is: upon the nature of the facts that prevented or restricted the incorporation of the area in the national production process. The following list of integration measures can be of very general character only, based upon those causes of desintegration that seem to be the most frequent ones. Some important points are:

i) the construction of an adequate transport and communication network, like roads, railways, waterways, ports, telecommunication, etc. and additional measures ensuring a regular operation of the system;

ii) stimulation of the movement of products through the organization of

trade channels and the establishment of a good credit system;

iii) stimulation of the movement of labour through the organization of bureaus of labour (or other intermediary bodies) and the creation of other migration facilities;

iv) stimulation of the movement of capital through the organization of a widely spread banking system, a national stock exchange, and other measures fostering the integration of the capital market;

v) the provision of basic facilities (infrastructure) in all parts of the country, especially education and vocational training facilities as they are a prerequisite for increasing labour mobility and diminishing the size of the subsistence economy sector.

vi) the elimination or lowering of institutional barriers to integration through e.g. new legislation like an agrarian reform law.

4.3. Without going here into more detail as regards the above-mentioned points, we may assume that it will be possible to remove gradually to a large extent the various obstacles and hinderances impeding close contact between the regions. What will be the result of this action? For the economy as a whole, several beneficial effects may be mentioned:

i) the factors of production will be allocated in a better or in the optimal way, 1/ which means a substantial increase in over-all productivity. Labour will move from the areas with a relative surplus to those where a relative scarcity exists. Capital will go to the places where its productivity is highest. People bestowed with entrepreneurial skill will have a greater opportunity to utilize their talents. Theoretically the outcome should be that every factor of production is distributed over the different alternative uses in such a way that its marginal product is equal in all directions or utilizations. Allowing for the fact that in reality the state of affairs will differ from this ideal situation because of the remaining frictions and unfulfilled assumptions, it still holds true that the factors of production will be used in a much better way and that, therefore, the rate of economic development will be increased considerably.

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1/ At least from the point of view of the private entrepreneur; the statement will be modified somewhat in the following paragraphs.

ii) the size of the market is enlarged. There are two factors causing this increase in size: first the geographical aspect of integration, augmenting the number of potential consumers; and second the increase in real income which is the consequence of lower supply prices (or, as the case may be, higher money incomes with constant prices) caused by lowering of transportation costs (in its proadest sense), a greater division of labour and increased large-scale production. As in many under-developed countries the process of economic development is seriously hampered by the limited size of the internal market, any contribution to the enlargement thereof will be of great value.

4.4. There can be no doubt as to the favourable consequences for the national economy of connecting various separate economic regions. However, economic development is not only a question of national totals or average, but also a matter of the right distribution of the gains of economic and social progress. Without entering into details about a controversial issue like the commandments of social equity, we may take it for granted that it is an accepted aim of development policy that everybody should share in an improvement of over-all economic conditions, and that poor people should receive a larger part of the gains than the rich. The side effects of the removal of barriers between the regions on the distribution of development gains are in general unfavourable. There is strong empirical evidence that the unchecked play of economic forces will increase rather than decrease the differences in income that exist between regions. Reasons for the perpetuation of regional contrasts in development are: 2/

i) labour will move from the poorer regions to the areas with higher wage rates. Usually it is the more energetic labourer that will decide to leave his native region; moreover, he will be in the most productive period of his life, in general. This selective migration means an important drain of human resources of the already relatively weak region and a worseing of the age distribution within the region. The last-mentioned effect may be reinforced by a relatively high birth rate which is not uncharacteristic for poor regions.

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2/ See Gunnar Myrdal, op. cit., page 26 ff.

ii) capital goes to the areas where investment will be most productive, i.e. to regions with expanding demand and the best prospects for the near future. In general, these regions will be the same as those with higher wages (caused by increasing demand for labour); capital movements, therefore, tend to have the same direction as migration flows. The expanding region receives a new inducement to economic growth, whereas the less expansive or even stagnating regions are worse off than before.

iii) increased interregional trade will, in most case, only strengthen the above effects. When trade barriers are removed, those regions will benefit mostly of the larger size of the market where industries are already stablished. The competitive advantages of existing industrial units (usually located in the more developed regions) over handicrafts, artisan's workshops, and less efficient production in general are great enough to conquer the major part of the market if not to force them to leave the market completely. Once more, we see that the stronger regions will grow more stronger at the cost of the weaker ones.

4.5. To the above-mentioned economic reasons for growing or at least lasting discrepancies between regions can be added the parallel influence of various non-economic factors. A counteracting force, on the other hand, is the stimulating effect the expansion of a region may have on complementary activities in other parts of the country. This favourable influence might offset the negative impact outlined above, but it seems more probable that a lowering or elimination of regional barriers will not lead automatically to more equal regional per caput incomes. This is especially true if the previously existing differences were substantial.

4.6. On this point for our analysis we should turn once more to the definition of integration. So far, we have discussed the ways to remove obstacles and barriers between regions and the possible consequences thereof; this, however, corresponds to the first part of the integration process only. The second element in our description of what is meant by integration refers to the fact that each region should play its maximum role in economic development. Integration policy not only aims at bringing the previously reparated economic regions in close contact with each other,

but also it will try to establish a geographically balanced development pattern. Only in this way is it possible to obtain the great advantages of a extended market and a "national" economy, and to avoid at the same time the drawbacks of important regional inequalities.

4.7. The question arises whether or not the measures leading to a more equal distribution of economic activity offset or at least counteract the advantages obtained through the free movement of factos of production, as summarized above in paragraph 4.3. We saw there, that the factors os production will move to the regions where their reward is highest. If they are induced or forced to go to other regions, does not this imply a non-optimal or less good allocation of resources and consequently a reduction of the welfare of the nation? For two reasons the question cannot be answered in an affirmative sense:

i) private costs may be (and in many cases will be) different from the social costs, i.e. the result of a profitability calculation may not be the same when it is done by a private entrepreneur as when it is done on a "national" basis, taking into account all costs and benefits involved. Not only the types of costs and returns taken into account may be different, but also the valuation of imput and output will usually be done on another basis. National interests, therefore, need not always coincide with private allocation decisions.

ii) it is not only the size of total national income which is important, but also the income distribution. To put it in technical language: in the social welfare function of a country enters the national income as well as the way in which it is shared by the various population groups. It is by no means an academical assumption to suppose that a policy maker would prefer a situation with a more equal income distribution (obtained without centrally administered redistribution) to a situation of greater inequality but with a somewhat higher average income.

4.8. The above points clearly show the need of stating as explicitly as possible the target that the policy maker, i.e. the central government, wants to pursue regarding economic development in general, and integration in particular. We discussed already very briefly the aim or target of development policy; one needs, however, more precise information

on several points as e.g. the degree of government intervention that is allowed or desired; the volume of migration that is compatible with general government policy; the relative value attached by the government to specific targets like full employment, and increase in per caput income, a more equal income distribution, etc.. Before the actual planning of national economic integration can start, the planning adviser should be informed in detail about the exact aims of the executive authority, and about the instruments that are, in general, acceptable as means to be used by this authority.

4.9. As the "preference schedule" for social values and, consequently, the objectives of government policy are different in different countries, it is impossible to state in detail the aims of a regional development policy. Nevertheless, it may be taken for granted that the general aim will be to influence regional development in such a way that the inter-regional differences in welfare (say: income) will be kept within certain limits or eventually will be brought down to within these limits. To achieve this target, the "positive" aspect of integration, several means are at the government's disposal. In the next chapter we will see what these means are and how they can be used to obtain a balanced regional development.

## 5. Balanced regional development

5.1. The proper way to analyse the problem of balanced regional development in relation to development planning in general would be to construct a model in which the inter-relationships and inter-dependencies are incorporated in a suitable fashion. There are, however, various reasons for which this method cannot be followed in many cases:

i) the model would be extremely complicated or at least would have very many equeations if the number of regions to be distinguished would be more than a few only; the practical application would require the use of expensive mathematical equipment.

ii) the statistical information required for estimating coefficients and initial values that appear in the model is usually highly unreliable or even completely lacking, especially regarding regional breakdowns.

iii) the application of mathematical models to problems of economic policy

presupposes a close cooperation between experienced and skillful mathematical economists on the one hand and politicians which clearly formulate their objectives and have confidence in the used method on the other hand. In newly-developing countries often not all of these prerequisite conditions are satisfied.

For the indicated reasons, we will not introduce here a complete model for analysing the interdependence between regional and national development. A very simple model is presented in Appendix A. This model, developed by Professor J. Tinbergen, is in all respects a very rough approximation of economic reality only, as it is hardly more than a calculation scheme. Nevertheless, it reveals some fundamental relationships which should be borne in mind in planning regional development policy. The application of the model to the conditions prevailing in Ecuador would be highly instructive. However, as things are at the time of writing, statistical information available does not even permit the use of this unsophisticated model. Application may be feasible, however, in the not too remote future, for which reason the model is outlined in the appendix referred to above. For the moment, we have to proceed without the help of a mathematical model.

5.2. We will see now, first, how the levels of economic activity in the various regions of a country can be modified by the government in order to obtain a geographically balanced development and, second, in what way this process is related with the over-all development plan as such.

Taking the per caput gross product or income as the best indicator of the level of economic development and welfare in the regions, it is clear that the value of this development index is determined by i) the volume of regional gross product, and ii) the size of the regional population. In many underdeveloped countries part of the population is unemployed or underemployed, especially in the poorest regions. This part of the population may be transferred to another area (at least in principle) without reducing the regional output. Therefore, per caput income of a backward region may be raised in comparison with the income her head of a more advanced area either by increasing gross product or income more rapidly in the poorer

region, or by increasing population shower in the backward region than in the more prosperous one.

To some extent, population movements seem to be the better instrument because usually productivity is higher in the more advanced regions; consequently it is more economical to locate enterprises in the already more developed regions and to bring in migrants from the less-developed regions. However, it may very well be that after and as a consequence of the establishment of new activities in a backward area the productivity in this region will increase so much that it reaches or even surpasses after some time productivity of the initially better-off region. Moreover, the number of people willing to migrate is in general rather limited which restricts the effect of this means of economic policy. Besides, there are less-desirable side-effects of important large-scale migration realized in a short time period, particularly in the social aspects of it.

These arguments do not imply, however, that inter-regional migration is an undesirable instrument; on the contrary: it is an effective and useful means in modifying the regional economic situation of a country, but it has very definite limits as to the scale on which it can be used. In addition, it should be well-planned and organized; the drawbacks of spontaneous, selective migration have to be avoided. Migration should move the whole family to another regions and not only the labourer; the future type and place of employment for the migrant should be determined as precise as possible; the required health measures (inoculation) should be taken in advance; a.s.o. If carefully organized and applied on not too large a scale, migration will ben an appropriate device for obtaining a more even distribution of regional per caput income.

5.3. The other instrument that may be used for influencing the regional distribution of income consists of the measures designed to foster discriminatively economic expansion in the low-income regions. We do not point to measures like the establishment of basic facilities or infrastructure; these matters are needed, but they bring a backward area only "on the same level" with regard to public utilities etc. as the more developed zones. These measures were discussed earlier already, in connection with the economic integration (in its restricted sense) of a country.

Here the intention is to give the low-income region in one or a few particular fields some definite advantages over the other areas, in the hope that these advantages will compensate and even over-compensate other disadvantages of the region. Largely, the question is to direct movements of capital, entrepreneurs and enterprises to the region that is lagging behind in development.

It would be unwise to foster the movement of all types of activity to the region or regions concerned. Many activities require well-defined conditions that generally prevail only in particular parts of the country. They cannot be pursued at all, or only at prohibitive costs, in other areas. To some extent the natural conditions and the resources available determine a region's development and expasion possibilites. Simple but illustrative examples of activities highly dependent upon specific physical conditions are port operations (tied to the coast or navigable rivers) and, more general, agriculture (determined by climatic and soil conditions). These production processes are location-fixed; they cannot be located more or less at random, and therefore should be left out of account in an "industrial migration" policy. Only those activities that are more or less location-free (e.g. a large part of the light manufacturing industries) may be moved by special measures to the less-developed zones without substantially augmenting their production costs 1/.

What type of measures can be taken by the government to direct industry towards the low-income areas? This is, of course, essentially a matter of economic policy. As far as investment of the government or of state enterprises is concerned, there is no problem. The difficulty is: how to get the private investor and the private entrepreneur in the right direction? A prerequisite is, of course, the creation of the economic infrastructure, but this is not sufficient. Additional measures are required. There are several possibilities:

i) First, it is possible that the government establishes a complete control over the location of enterprises exceeding a certain size; new

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1/ For a somewhat more elaborate discussion of this matter see Appendix A.

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industries, as well as already established ones that want to expand, need a licence of the relevant ministry before they may start investment activity. This system is followed e.g. in Great Britain.

ii) Second, it is possible that the government wants to abstain from direct control over location. Then, a system of tax inducements and other (financial) assistance measures should be created, making the location in the relevant areas more attractive. Several countries tried to solve the problem in this way, for instance the Netherlands. The experience of this country shows that the incentives have to be rather strong if they are to be effective.

iii) Third, a whole gamut of combinations of the possibilities mentioned under i) and ii) is possible. In certain branches complete control may be required, especially in key industries; sometimes full control is necessary only in special areas. To the extent that the best location from the regional policy point of view would bring with it a real disadvantage for the private entrepreneur, he will have to be compensated for this fact in one way or another. A misture of the policies mentioned under i) and ii) is applied, inter alia, in France.

5.4. Finally, it has to be analyzed how the policy of balanced regional development is related with the country's general development plan. Here in particular the use of an economic model is highly desirable, because of the various inter-dependencies in the economy. We refer again to Appendix A for a simple example.

The general plan gives the production targets for all branches of activity for a certain plan year. Data about regional production structure and income in the base year, together with the information contained in the plan regarding the increase in production in the location-fixed activities, make it possible to estimate the regional per caput income figures for the plan year if no planned migration would take place and if the production in the location-free activities would not increase. The resulting regional distribution of per caput income will in all probability be different from the most desirable distribution at which the government is aiming. Generally, as we saw earlier in the analysis, differences between the regions will not dispappear automatically; often they become more pronounced in the course of

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time. In this case the government may use the instruments of planned migration and the establishment of location-free activities in order to obtain a better distribution of production and income between regions.

The total increase in the so-called location-free activities is also given by the general development plan. Part of this increase cannot be considered as completely location-free, however; if there exists idle capacity in these activities in the base year, for instance, it would be unwise to establish new enterprises before the unused capacity has been brought in production. Hence, part of the location-free activities should be allocated to those regions where idle capacity exists; another part of the production increase can best be realized through extension of already established enterprises. Nevertheless, a more or less substantial part of the planned increase in production of location-free activities is indeed "available" for modifying the regional distribution of income. This volume of production is determined and restricted, however, by the general develo ment plan and cannot be fixed at random or augmented ad libitum. Another restriction on the scope and effect of this instrument of policy is impose by the degree of control the government has or will establish over private enterprise. If the government has absolute authority over the location o enterprises, all "available" production increase in location-free activiti may be used for balancing regional development. If, on the other hand, th government wants to use inducements only, it is certain that not for all entrepreneurs and investors the incentives will be strong enough to move the backward areas. How strong the inducements will have to be to make t policy reasonably effective is a matter that has to be determined empiric

As refers to the scope of planned migration from the poorer to the more prosperous regions, again the general plan will give some indications about the best direction and the possible size of the movement However difficult it may be, an estimate has to be made of the volume of open or disguised unemployment in the low-income regions in the plan year These figures indicate the upper limit of the planned migration from the less-developed to the more advanced zones 2/. The regions of destination

2/ This upper limit is by no means an absolute one. Migration exceeding number of unemployed may be desirable, but in this case a careful stud of gains and losses involved is necessary as the advantages are less obvious then.

are those with highest per caput income in the plan year, and -amongst these- especially the areas with the greatest relative scarcity of the factor labour. Again, the effect in quantitative terms of the migration policy depends upon the efficacy of the stimulating measures taken by the government. Forced migration for economic purposes will not be an acceptable instrument for any democratic government.

5.5. Which of the two instruments has to be preferred? This depends entirely upon the relative appreciation of the policy maker for the instruments. One government may wish to use first of all industrial location as its instrument in regional policy; in another country the government may prefer to rely mainly on migration-stimulating measures 3/. Both instruments may be applied at the same time. Especially when only inducements and incentives areused and when existing regional differences are substantial, it may be a long way before the target of the regional development policy (in particular: balanced regional development) is reached. In this case the simultaneous use of both means mentioned above would seem to be the most appropriate policy.

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3/ The "valuation" of the instruments is influenced i.a. by local conditions. If the better-off areas are already densily populated, migration to these regions is not to be recommended because of actual or latent congestion.

## B. THE APPLICATION OF THE METHOD OF ANALYSIS TO ECUADOR

### 6. The form of the second part of the study.

6.1 Having described in the preceding chapters the basis and set-up the study in general terms, we may turn now to the practical pa in which we will apply the outlined approach to the actual situation an conditions in Ecuador. First, we have to see what are the various regi of the country that may be distinguished, and how their boundaries may fixed for practical purposes. In addition, their (economic) characteri tics must be described briefly as well as the major differences between the regions, both in quantitative terms as far as possible 1/. Moreove something has to be said about the future development of the differences that may be expected to take place if no deliberate government action w be taken in this respect.

Second, the aims and means of the regional policy of the governm will be discussed. The Government of Ecuador has declared itself in ge ral terms in favour of the economic integration and the regional balanc in economic development; the targets of its regional policy, however, have never been stated very precisely, neither have the means that are be used. In the discussion of these points there has to remain for thi reason some uncertainty as to the fact what precisely the Government thinks to be a desirable course of action.

Third, in view of the existing situation and the expected develo ments on the one hand, and the aims and means of government policy on th other, we have to analyse what action seems to be required in orden to achieve the goals of the regional policy. Here, again, we will make a distinction between the "negative" aspect of the targets (the removal of obstacles for interregional economic contact) and the "positive" aspect (the regional balance in economic development). The analysis results in the proposition of a series o measures that will lead (partially or

1/ The problem here, as elsewhere, is that the statistics required for this purpose are almost completely lacking. Statistical information given later on in this study has not always been included primarely because it was thought to be of outstanding importance, but often as a substitute for more appropriate figures that could not be obtained.

totally) to attaining the aims of the integration policy of the government.

6.2 The three above-mentioned steps in the analysis are discussed in detail in the three following chapters. As far as feasible, we will use 1955 as the base year for statistics etc., in accordance with the practice followed in most of the studies of the Junta Nacional de Planificación y Coordinación Económica. In order to have some idea about possible future developments, we will compare the per caput production data for 1955 with the estimated 1965 figures.

## 7. Economic regions in Ecuador

7.1 For the purpose of the present study the national territory of Ecuador has been divided into twelve regions or zones. They have been numbered from 1 to 12 consecutively. A minute description of the area included in the various regions is given in Appendix B. A map is included as Appendix E. Roughly the location of the twelve zones may be indicated in the way of Table 1.

TABLE 1

APPROXIMATE DESCRIPTION OF THE ECONOMIC REGIONS OF ECUADOR

| Number of the region | Provincial territory included in the area of the region. |
|---|---|
| 1 | Guayas (except the dry western part), Los Ríos, Manabí (the eastern part belonging to the basin of Río Daule), the southern part of tropical Pichincha, the small tropical parts of Cotopaxi, Bolívar and Cañar, the tropical part of El Oro. |
| 2 | Southern Manabí (except a small eastern zone), the western (dry) part of Guayas. |
| 3 | Northern Manabí (except a small eastern zone), Esmeraldas, tropical Imbabura, the northern part of tropical Pichincha. |
| 4 | Loja, Zamora Chinchipe, the temperate part of El Oro. |
| 5 | Azuay, the southern part of temperate Cañar, the (southern) part of Morona Santiago adjacent to Azuay and Cañar. |
| 6 | The northern part of temperate Cañar, temperate Bolívar, Chimborazo, the south-western part of Cotopaxi. |
| 7 | Tungurahua, the south-eastern part of Cotopaxi. |
| 8 | The northern part of temperate Cotopaxi, temperate Pichincha, temperate Imbabura, temperate (western) parts of Napo Pastaza. |

Continued Table 1

| Number of the region | Provincial territory included in the area of the region |
|---|---|
| 9 | Carchi |
| 10 | The parts of Napo Pastaza and Morona Santiago between 1. and 500 m. altitude. |
| 11 | Napo Pastaza and Morona Santiago below 500 m. altitude (except the southern part of Morona Santiago). |
| 12 | Galápagos Islands. |

NOTE: "temperate" indicates an altitude of more that 1.500 m.; "tropi indicates an altitude of less that 1.500 m.

7.2 The different regions and their boundaries have not been dete mined on the basis of one single criterion, but according to variety of factors that have immediate bearing upon the economy of th region. Most of these factors have been mentioned already in Chapter of Part A; here we will see which of them actually have been used in the present case to find the regions in which the country may be divi The factors may conveniently be grouped together under three differer headings; the first -referring to the natural conditions- and the se ond group -population and labour- mention the regional differences i the endowment with productive resources, whereas the third group of factors considers the differences in "orientation" of the regional ec nomy, mainly in connection with the market for its products. Let us see now what criteria actually have been used for identifying the eco nomic regions of Ecuador.

a. Differences in natural conditions

i) Climate

It is easily understood that in a predominantly agricultural country like Ecuador regional economic conditions depend heavily upon the climate; as the climatic conditions differ very much in the vario parts of the country, we have to recognize the climate as one of the most important factors causing regional differences.

It has become common practice to divide the Ecuadorean terri- tory for purposes of economic and social analysis in three areas: Cos the coastal lowlands with tropical climate; Sierra, the mountains of

the Andes and the inter-Andean valleys with temperate climate; and Oriente, the inland tropical area which forms part of the Amazone basin. The area which lies above 1,500 m. altitude is considered in the present study as the Sierra (which is subdivided on other grounds in 6 regions); the area west of the Sierra (below 1.500 m.) is the Costa (composed of three regions), and east of the Sierra lies the Oriente (which consists of 2 regions).

Another important climatic difference exists between region 2 and regions 1 and 3, as in the former rainfall is rather scanty (especially in the southern part) whereas it is abundant in the latter two regions.

ii) mineral and/or oil deposits.

Regions 4 and 5 of the Sierra possess mineral resources (although largely potential resources only); region 2 is the only area where oil fields are exploited.

iii) availability of agricultural land, especially in its institutional form: Ownership and tenure systems.

Region 6 may, very roughly, be described as the region where the huasipungo-system is found more frequently than elsewhere in Ecuador; region 7 is characterized by the existence of many small holdings, owned by free farmers and intensively cultivated; in region 8 again many large haciendas are found which use, however, more often free labourers than huasipungeros.

iv) accessibility.

The most striking example of differences in accessibility is found in the Oriente, where region 10 (the area east of the Sierra, lower 1.500 m. but higher than 500 m.) is much easier to enter for traders, colonists, etc. than region 11 (the area below 500 m.).

v) natural transport systems

Especially in the Costa, the fluvial transport systems are very important. One system is that of the Rio Guayas, the Rio Daule and their tributaries, centering at Guayaquil (region 1); another system is that of the Rio Esmeraldas and the city Esmeraldas (region 3).

b. Differences in the human factor.

i) density.

The density of population is much below the national average in

regions 3, 10 and 11.

ii) mobility

One of the consequences of the huasipungo-system is the very limited mobility of the huasipunguero (region 6); another typical as of this region is the seasonal migration.

iii) tribal and racial differences.

Outstanding examples of this factor (causing i.a. difference in working and consumption habits) are given by region 11 (nomadic "uncivilized" indian tribes) and region 3 (almost pure negro populat

c. Differences in the "orientation" of the most importante e nomic activities.

i) Orientation on foreign markets.

The regions of the Costa produce first of all for export; re gions 4 and 9 of the Sierra are to a large extent orientated towards Perú and Colombia, respectively, mostly in relation with illegal eco nomic activities (contraband). Region 1 (Guayaquil) dominates the i port trade.

ii) orientation on the national market.

Production for the home market is the principal activity of Sierra regions.

iii) subsistance production.

Although not completely absent in the Sierra, the main areas where subsistance production prevails are the regions of the Oriente.

iv) high degree of specialization.

Region 5 concentrated for many years on the production of str hats (Panama hats). To a lesser extent, specialization is also found in e.g. region 3 (bananas).

The factors mentioned above represent by no means all forces working towards regional differentiation. They are, however, mostly

of a rather permanent character (particularly the physical and geographical factors) or can be changed only in the long run; for this reason they seem to be the most useful indicators for distinguishing the economic regions of the country.

For various reasons it was deemed undesirable to introduce too large a number of regions; nevertheless their number could not be brought down to less than twelve. Guayaquil and Quito, the two largest urban centres, are not introduced as two separate regions but included in the areas to which they belong geographically and with which they have the closest economic relations.

The boundaries of the twelve regions have been adapted for reasons of statistical convenience in such a way that they coincide with the boundaries of the smallest political units, the parishes or "parroquias". Even so, the compilation of statistical information about the regions proved to be a very difficult and laborious matter. In many instances, the figures were only available at the level of the cantons; as a canton consists of several (often as much as ten) parroquias, it may belong partly to one region, partly to another, in which case the shares of the two (or more) regions had to be estimated.

The statistical and other data that could be obtained for the regions 10 and 11 (Oriente) and region 12 (Galápagos islands) were very uncomplete, unfortunately. It was often impossible, therefore, to include these regions in the analysis, particularly when quantitative information was involved. This omission is not too serious, however, as the reamining nine regions have about 86 per cent of total population, and an even larger share of total production and income.

7.3 Given, thus, the economic regions of the country, let us see now what statistical information is available about the most important economic data regarding the various regions. Generally the figures will speak for themselves; sometimes a short explanation must be given.

TABLE 2

ECUADOR: AREA AND POPULATION OF THE ECONOMIC REGIONS

| Region | Area in sq. km. | 1955 population in 1,000 | inhabitants per sq. km. |
|---|---|---|---|
| 1 | 41.300 | 928 | 22 |
| 2 | 14.700 | 499 | 34 |
| 3 | 22.900 | 143 | 6 |
| 4 | 30.000 a/ | 277 | 9 |
| 5 | 13.400 | 356 | 27 |
| 6 | 10.300 | 393 | 38 |
| 7 | 4.000 | 241 | 60 |
| 8 | 18.200 | 727 | 40 |
| 9 | 3.700 | 86 | 23 |
| 10 | 34.900 | 32 | 1 |
| 11 | 55.200 | 6 | 0,1 |
| 12 | 7.900 | 2 | 0,3 |
| Ecuador | 256.500 | 3.690 | 14 |

a/ the area of the province Zamora-Chinchipe, which is part of regi 4, cannot be determined exactly as no frontier line with Perú ha been established in this region. The area has been estimated at 17.900 sq. km. as a minimum figure.

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The last column of Table 2, indicating the density of popula tion per region, has not much meaning for analytical purposes as it relates population to total area. In most regions part of the total area is actually without importance for human settlement and product (except possibly in the long run); the percentage that this part con titutes of the total area of the region is different for all regions. The figures of the column in question therefore do not reflect e.g. population pressure on "available" land. In particular, the figure for region 4 cannot be compared with the figures of the other Sierra regions for this reason.

Existing vital statistics are far from reliable. Population

growth after 1950, the census year, can only be estimated. Figures for the country as a whole are therefore always more or less arbitrary. Obviously, regional figures are even less certain.

In the present study we assumed and overall rate of growth of population of 2.8 per cent a year. All sources and estimates that were consulted agreed on the point that population growth is higher growth rate in the Costa is partially a result fo the migration from the Sierra to the coastal area, the natural growth rate (birth rate minus death rate) can be calculated at 2.6 per cent per annum for the Sierra (regions 4-9) and 3.1 per cent for the Costa (regions 1-3). Because of a lack of data we will assume a growth rate of 2.8 per cent for the Oriente (regions 10-11), which is the same as the national average.

7.4 As regards migration, Table 3 indicates the volume of inter-regional movements that may be expected to occur during the ten-year period 1955-1965. The figures of this table are calculated on the basis of a special study made by the Statistical Section of the Junta de Planificación for the years 1950-1960. They indicate the direction and magnitude of the "spontaneous" inter-regional migration, and neglect therefore population movements inside a region. In all regions, there is a movement away from the country-side, to the urban areas.

TABLE 3

ECUADOR: ESTIMATED SPONTANEOUS INTER-REGIONAL MIGRATION DURING THE PERIOD 1955-1965

| Region | Number of migrants entering (+) or leaving (-) the region, in 1,000 (1) | Relative size of migration: Col.(1) as a percentage of 1955 population (2) |
|---|---|---|
| 1 | + 84 | + 9.1 |
| 2 | - 22 | - 4.4 |
| 3 | - 6 | - 4.2 |
| 4 | - 16 | - 5.8 |
| 5 | - 24 | - 6.7 |
| 6 | - 30 | - 7.6 |
| 7 | - 18 | - 7.5 |
| 8 | + 37 | + 5.1 |
| 9 | - 4 | - 4.7 |
| 10 + 11 | - 1 | - 2.6 |

As Table 3 clearly shows, all regions except 1 and 8 are expected to lose part of their population through emigration. Movements are directed towards regions 1 and 8, or more precisely to t two large cities Guayaquil and Quito. Therefore, the inter-region as well as the intraregional population movements are essentially leading to the same result: urbanization.

The regions with the highest rate of emigration are the Sierra regions (except 8). About 40 per cent of the inter-regiona Sierra migrants probably go the another Sierra region (region 8, Q to), the remaining 60 per cent going to the Costa (region 1, Guaya quil). In the 10 year period under consideration, the coastal are is expected to receive an influx of 56,000 people from the other parts of the country.

It must be remarked finally that the figures of Table 3 refer only to long-term or "definite" migrations. Seasonal migrat is not included.

7.5 Detailed information about the working population and it composition is available for the year 1950 only. An esti te for 1957 made by the Junta de Planificación revealed that no su tantial changes took place since 1950 (some decline in agriculture some increase in services). Percentagewise, the figures for 1950 and 1955 would have been almost the same, presumably. In the follo ing tables the available information is summarized.

The high percentage found in Table 4 for region 5 (Azuay, southern Cañar) reflects the great number of handicrafts (straw hat in this area using the labour of many family members. For the thre coastal regions (1 to 3) the percentages are almost the same, and below the national average. The latter fact is partly a consequen of the higher birthrate in this area (see next page).

TABLE 4

ECUADOR: WORKING POPULATION IN ABSOLUTE FIGURES AND AS A PERCENTAGE OF TOTAL POPULATION, BY ECONOMIC REGIONS (1950)

| Region | Working population in 1,000 | Working population as per cent of total population |
|---|---|---|
| 1 | 279 | 35.7 |
| 2 | 148 | 35.2 |
| 3 | 43 | 35.6 |
| 4 | 92 | 37.5 |
| 5 | 154 | 48.7 |
| 6 | 144 | 41.2 |
| 7 | 82 | 38.5 |
| 8 | 252 | 39.0 |
| 9 | 29 | 37.6 |
| 10 | 11 | 41.0 |
| 11 | 2 | 38.4 |
| 12 | 0,4 | 33.3 |
| Ecuador | 1.236 | 38.6 |

TABLE 5

ECUADOR: COMPOSITION OF WORKING POPULATION IN PERCENTAGES, BY ECONOMIC REGIONS (1950)

| INDUSTRY | Region 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Agriculture, etc. | 44.3 | 53.8 | 64.8 | 65.2 | 40.1 | 63.6 |
| Mining | 0.2 | 1.5 | 0.0 | 0.1 | 0.2 | 0.1 |
| Manufacturing industry | 14.1 | 19.1 | 8.3 | 20.5 | 49.6 | 23.2 |
| Construction | 2.4 | 1.3 | 1.2 | 1.2 | 1.2 | 1.4 |
| Public utilities | 0.2 | .0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| Trade | 9.3 | 4.7 | 4.5 | 2.9 | 2.4 | 3.0 |
| Transport and commun. | 4.0 | 1.9 | 2.1 | 0.7 | 0.8 | 1.6 |
| Services | 15.6 | 9.1 | 10.1 | 8.7 | 5.4 | 7.0 |
| Unspecified activities | 9.9 | 8.6 | 9.0 | 0.7 | 0.2 | 0.1 |
| | 100 | 100 | 100 | 100 | 100 | 100 |

| INDUSTRY | Region 7 | 8 | 9 | 10 | 11 | 12 | Ecuador |
|---|---|---|---|---|---|---|---|
| Agriculture etc. | 59.8 | 36.7 | 51.5 | 74.3 | 73.0 | 74.6 | 49.5 |
| Mining | 0.1 | 0.5 | 0.4 | 3.3 | 4.1 | - | 0.4 |
| Manuf. industry | 21.9 | 27.1 | 27.0 | 4.1 | 4.1 | 8.0 | 23.8 |
| Construction | 2.6 | 4.1 | 2.3 | 0.4 | 1.0 | - | 2.2 |
| Public utilities | 0.0 | 0.2 | 0.0 | - | - | - | 0.1 |
| Trade | 4.9 | 7.5 | 5.1 | 0.9 | 1.0 | 0.9 | 5.7 |
| Transport and commun. | 1.6 | 2.7 | 1.4 | 0.5 | 0 | 1.8 | 2.2 |
| Services | 9.0 | 17.8 | 12.1 | 9.7 | 8.1 | 13.6 | 11.7 |
| Unspecified activities | 0.1 | 3.4 | 0.2 | 6.8 | 8.7 | 1.1 | 4.4 |
| | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

The figures of Table 5 give some indication about the s
ture of production in the regions. It must be borne in mind, howe
that the degree of specialization of the labour force in general i
ry low. This means that people easily can (and will) move from on
type of activity to another. The composition of the working popul
tion given in Table 5 and describing the situation of the year 19
had in general not changed very much by 1955; nevertheless, this
not imply that the distribution of the labour force over the vari
occupations is necessarily constant in the course of time, or cha
only slowly.

A striking example of a substantial change in not more
than five years is the decline in the straw hats industry in regi
the percentage of the labour force working in manufacturing indus
fell in five years from nearly 50 to about 35-40. In this partic
case part or the workers previously employed in this industry wen
(back) to agricultural activities (the percentage working in agri
ture will be higher than 40, at present). Another part had no
labour opportunities (especially the helping family members) and
now excluded from the working population.

The distribution shown in Table 5 is therefore a rathe
flexible one. It must be noted that -statistically speaking- the
exists no unemployment. The figures of the table have the well-k
bias of including "disguised unemployment", above all in agricul
but also in services, trade and unspecified activities. Even in
nufacturing industries (the word actually covers a large gamut o
production techniques) there may be many people reported as empl
that virtually make no contribution to national output.

7.6 For the regions of the Costa and the Sierra, regional
gross (internal) product has been estimated. It was
ssible to calculate regional gross product for the regions 10, 1
12. Moreover, also the figures for the nine other regions that
mentioned in the below table have to be used with great care, as
are very rough estimates only.

TABLE 6

ECUADOR: REGIONAL GROSS (INTERNAL) PRODUCT IN 1955

| Region | Gross internal product in millions of Sucres | Per caput gross internal product in Sucres | Index of regional per caput gross product. |
|---|---|---|---|
| 1 | 3.597 | 3.880 | 144 |
| 2 | 1.292 | 2.590 | 96 |
| 3 | 590 | 4.130 | 154 |
| 4 | 435 | 1.570 | 58 |
| 5 | 504 | 1.420 | 53 |
| 6 | 706 | 1.800 | 67 |
| 7 | 431 | 1.790 | 67 |
| 8 | 2.188 | 3.010 | 112 |
| 9 | 200 | 2.330 | 87 |
| Total nine regions.... | 9.943 | 2.690 | 100 |

According to the data of Table 6, per caput gross internal product or per caput income, which will be about the same percentage of gross internal product in all regions) of the most prosperous region was more than three times the per caput gross product of the poorest region. The average figure for the three coastal regions (1-3) is 3.490 Sucres, and the corresponding figure for the Sierra regions ( 4 - 9). 2.150 Sucres. This means that the average per caput income in the Costa is 30 per cent above the national figure, whereas the Sierra average is 20 per cent lower than the figure for the country as a whole.

The breakdown by sectors of the totals of Table 6 for regional gross internal product is given in Appendix C.

All figures refer to gross internal product, which differs from the more often used concept of gross national (regional) product for two reasons:

i) internal product excludes incomes (in general: factor payments)

earned abroad but transferred to Ecuador;
ii) internal product includes incomes (in general: factor payments) ea
Ecuador but transferred to other countries.

In the case of Ecuador, especially the second item is likely t
portant. In regions where the activity of foreign enterprises is subs
in comparison with the share of national Ecuadorian enterprise, the va
gross national product will be considerably lower than the value of gr
ternal product. A good example of this case is the situation prevaili
region 3, where foreign enterprise actively participates in the domina
economic activity, the growing of bananas. It is probable that the ve
able position of this region vis-a-vis the other regions would be less
ced if the comparison had been made on the basis of gross national pro
Unfortunately, the required additional information for the latter proc
is lacking.

7.7. It is interesting to see what will happen as to the existing d
ces in income in the course of time, supposing that no special
ment action is taken to reduce the inequalities. An approximate calcul
has been made for the development during the ten-year period after 195
for the year 1965. Based on the targets for that year proposed in the p
minary study of the Junta de Planificación 1/ and partially revised aft
it has been analyzed how gross product possibly will grow in the vario
ions. The method used for this-admittedly very rough- calculation is d
in Appendix D.

TABLE 7

ECUADOR: ESTIMATED GROSS (INTERNAL) PRODUCT IN 1965

| Region | Gross internal product in millions of sucres | 1965 production ind (1955=100) |
|---|---|---|
| 1 | 6260 | 174 |
| 2 | 2249 | 174 |
| 3 | 916 | 155 |
| 4 | 697 | 160 |
| 5 | 807 | 160 |
| 6 | 1159 | 164 |
| 7 | 710 | 165 |
| 8 | 3729 | 170 |
| 9 | 361 | 181 |
| Total nine regions | 16.888 | 170 |

The rate of growth during the ten years 1955-1965 is not the same, of course, for all regions, but differences are not very marked. Nevertheless, it seems that growth will be somewhat quicker in the better-off regions (except region 3) than in the regions which had in 1955 low average income figures. Moreover, it must be realize

1/ Bases y Directivas para programar el desarrollo económico del Ecuador, Tomo 1; Quito, 1958.

that equal growth rates would keep the relative positions of the regions the same but widen the gap in absolute figures. The low income regions of 1955 would also be the poorer regions in the future, according to the growth rates of Table 7, if no deliberate (government) measures are taken to change the pattern of regional economic growth. However, this table does not take into account the effect of (unequal) population growth and inter-regional migration. Let us see now what is the impact of these two factors on future regional income differences.

TABLE 8

ECUADOR: COMPARISON OF REGIONAL GROSS (INTERNAL) PRODUCT IN 1965

| Region | Index of 1965 regional per caput gross product (equal population growth in all regions) | Index of natural population growth 1955-1965 | Index of 1965 regional per caput gross product (allowing for unequal natural population growth) |
|---|---|---|---|
| 1 | 147 | 136 | 143 |
| 2 | 99 | 136 | 96 |
| 3 | 141 | 136 | 137 |
| 4 | 55 | 129 | 56 |
| 5 | 50 | 129 | 51 |
| 6 | 65 | 129 | 66 |
| 7 | 65 | 129 | 66 |
| 8 | 112 | 129 | 115 |
| 9 | 93 | 129 | 95 |
| Total nine regions... | 100 | 132 | 100 |

From Table 8 it is evident that the higher rate of natural growth of population prevailing in the Costa has to some extent a compensatory effect on the unequal growth of regional gross product. This compensation is even more pronounced when migration is taken into account, as is done in Table 9. The estimated relative per caput incomes of the various regions show somewhat smaller deviations from the national average in 1965 than in 1955 (cf. the last columns of

Table 6 and Table 9). Nevertheless, the differences between the re will probably increase if they are measured in absolute terms. The fference between the per caput gross product of region 1 (one of th more prosperous zones) and that of region 5 (the poorest area, acco ding to our figures) was 2.460 Sucres in 1955, but is expected to in 1965 as much as 2.760 Sucres.

TABLE 9

ECUADOR: COMPARISON OF REGIONAL GROSS (INTERNAL) PRODUCT IN 1965

| Region | Index of 1965 regional per caput gross product (equal population growth in all regions) | Index of net (incl. migration) population growth 1955-1965 | Index of 1965 regional per caput gross product (allowing for net population growth) |
|---|---|---|---|
| 1 | 147 | 145 | 134 |
| 2 | 99 | 131 | 100 |
| 3 | 141 | 132 | 141 |
| 4 | 55 | 124 | 59 |
| 5 | 50 | 123 | 54 |
| 6 | 65 | 122 | 70 |
| 7 | 65 | 122 | 70 |
| 8 | 112 | 134 | 110 |
| 9 | 93 | 125 | 98 |
| Total nine regions... | 100 | 132 | 100 |

It may seem to be a questionable procedure to estimate region's total production without taking into account the size of its (working) population. However, it must be borne in mind that labour is virtually abundant in all regions (with the possible exception of region 3), so that population movements influence regional per caput production (and income) rather than total regional production, altho changes in the latter are possible, of course.

7.8 In addition to the data about regional population, employment and production it is necessary to be informed about the economic infrastructure and the possibilities of movements of pr

ducts and production factors in order to obtain a more complete picture and to be able to outline the basic principles of a regional economic policy of the government. Some information about the transport system is given below.

TABLE 10

ECUADOR: TRANSPORTATION FACILITIES FOR INTER-REGIONAL TRANSPORT (END OF 1959)

| Region | Regional Boundaries adjacent regions | length of boundary in km. a/ | Number of roads b/ crossing boundary | Number of roads b/ per 100 km. boundary | Other means of transportation. |
|---|---|---|---|---|---|
| 1 | 2 | 240 | 4 | 1.6 | coaster |
| | 3 | 210 | 1 | 0.5 | coaster |
| | 4 | 80 | 2 | 2.5 | |
| | 5 | 90 | 1 | 1.1 | railway (via 6) |
| | 6 | 160 | 7 | 4.4 | railway |
| | 8 | 100 | 2 | 2.0 | railway (via 6) |
| | Perú | 50 | 1 | 2.0 | |
| 2 | 1 | 240 | 4 | 1.6 | coaster |
| | 3 | 40 | 0 | 0 | coaster |
| 3 | 1 | 210 | 1 | 0.5 | coaster |
| | 2 | 40 | 0 | 0 | coaster |
| | 8 | 120 | 0 | 0 | railway |
| | 9 | 40 | 0 | 0 | |
| | Colombia | 30 | 0 | 0 | |
| 4 | 1 | 80 | 2 | 2.5 | |
| | 5 (Azuay) | 70 | 1 | 1.4 | |
| | 5(Oriente) | 120 | 0 | 0 | |
| | 10 | 40 | 0 | 0 | |
| | Perú (with Loja | 120 | 1 | 0.8 | |
| 5 | 1 | 90 | 1 | 1.1 | |
| | 4 (with Azuay) | 70 | 1 | 1.4 | |
| | 4 (with Oriente) | 120 | 0 | 0 | |
| | 6 | 90 | 1 | 1.1 | railway |
| | 10 | 60 | 2 | 3.3 | |
| 6 | 1 | 160 | 7 | 4.4 | railway |
| | 5 | 90 | 1 | 1.1 | railway |
| | 7 | 90 | 2 | 2.2 | railway |
| | 8 | 20 | 0 | 0 | railway (via 7) |
| | 10 | 110 | 0 | 0 | |

Table 10 (continued)

| Region | Regional Boundaries: Adjacent regions | lengths of boundary in km. a/ | Number of roads b/ crossing boundary | Number of roads b/ per 100 km. boundary | Other means of transportation |
|---|---|---|---|---|---|
| 7 | 6 | 90 | 2 | 2.2 | railway |
| | 8 | 60 | 1 | 1.7 | railway |
| | 10 | 100 | 1 | 1.0 | |
| 8 | 1 | 100 | 2 | 2.0 | railway (via |
| | 3 | 120 | 0 | 0 | railway |
| | 7 | 60 | 1 | 1.7 | railway |
| | 9 | 110 | 3 | 2.7 | |
| | 10 | 180 | 1 | 0.6 | |
| | Colombia | 40 | 0 | 0 | |
| 9 | 3 | 40 | 0 | 0 | |
| | 8 | 110 | 3 | 2.7 | |
| | Colombia | 120 | 2 | 1.7 | |
| 10 | 4 | 40 | 0 | 0 | |
| | 5 | 60 | 2 | 3.3 | |
| | 6 | 110 | 0 | 0 | |
| | 7 | 100 | 1 | 1.0 | |
| | 8 | 180 | 1 | 0.6 | |
| | 11 | 340 | 0 | 0 | river shipping |
| | Colombia | 60 | 0 | 0 | |
| 11 | 10 | 340 | 0 | 0 | river shipping |
| | Colombia | 200 | 0 | 0 | |
| | Perú | 300 | 0 | 0 | river shipping |

a/ Boundaries are considered to be straight lines for this purpose

b/ including roads under construction.

Note: in all regions (except 6 and 7) there is at least one town or city which has regular air connections with the other regions.

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The data of Table 10 -although of limited significance- give some indications as to the relative accessability of the region It is clear, for example, that Region 1 is in favourable position as regards its connections with the surrounding zones. On the other ha the worst-off area is obviously Region 11, which is not surprising in view of the low economic importance (at present) of this sparely pop lated zone. More remarkable is the fact that such a rich agricultur

area as Region 3 is almost isolated from the neighbouring regions, as Table 10 shows.

7.9 An important element of the infrastructure is also the internal transport network of the various regions. The next two tables give some insight in the present situation.

TABLE 11

ECUADOR: ROADS, AND DENSITY OF ROAD NETWORK, IN THE REGIONS OF THE COUNTRY (END OF 1959)

| Region | Length of roads a/ in km. | Roads (in km.) per 1,00 sq. km. b/ | | Roads (in km.) per 1,000 inhabitants (1955) |
|---|---|---|---|---|
| 1 | 3743 | 91 | | 4.0 |
| 2 | 3036 | 207 | | 6.1 |
| 3 | 390 | 17 | | 2.7 |
| 4 | 1362 | 44 | (113) | 4.9 |
| 5 | 1253 | 94 | (133) | 3.5 |
| 6 | 1609 | 156 | | 4.1 |
| 7 | 610 | 153 | | 2.5 |
| 8 | 2620 | 144 | (191) | 3.6 |
| 9 | 559 | 151 | | 6.5 |
| 10 | 289 | 8 | | 9.0 |
| 11 | - | - | | - |

a/ including roads under construction.
b/ figures in brackets indicate the average density if the part of the region's area belonging to one of the oriental provinces is excluded.

TABLE 12

ECUADOR: ISOLATED VILLAGES a/ BY REGIONS ( END OF 1959)

| Region | Estimated 1955 population in 1,000 | | | Percentage of total population |
|---|---|---|---|---|
| | rural | urban | total | |
| 1 | 207.2 | 17.8 | 225.0 | 24 |
| 2 | 157.6 | 1.7 | 159.3 | 32 |
| 3 | 86.6 | 6.5 | 93.1 | 65 |
| 4 | 101.5 | 8.0 | 109.5 | 40 |
| 5 | 52.3 | 0.3 | 52.6 | 15 |
| 6 | 45.7 | - | 45.7 | 12 |
| 7 | 18.3 | - | 18.3 | 8 |
| 8 | 14.1 | - | 14.1 | 2 |
| 9 | 7.6 | - | 7.6 | 9 |
| 10 | 23.7 | - | 23.7 | 74 |
| 11 | 5.4 | - | 5.4 | 100 |
| 12 | 1.4 | - | 1.4 | 100 |
| Ecuador | 721.4 | 34.3 | 755.7 | 20 |

a/ as isolated villages have been considered those that i) are inaccessible by road or railroad during the whole year, or ii) are inaccessible by road during the rainy season but served by so-called summer roads during the dry season.

In interpreting and using the figures of these two tabl one has to be aware of the existence of other means of transportat than those connected with and depending on roads. Especially rail and river navigation should be mentioned here; the latter is impor in the regions 1, 3 and 11 only. The coastal regions (1, 2 and 3) have a high percentage of summer roads -for the Costa as a whole m than 50 per cent- which fact explains the high figures for isolate population given in Table 12 for these zones.

7.10 Another important component of the economic infrastructu is the supply of energy. A picture of the present situa in this respect is given in Table 13.

TABLE 13

ECUADOR: INSTALLED CAPACITY AND ENERGY PRODUCED, BY REGIONS (END O

| Region | Capacity in 1,000 KW | Energy produced in million KWH | Capacity in KW per 1,000 inhabitants | Production i KWH per caput |
|---|---|---|---|---|
| 1 | 47.6 | 132.3 | 51 | 143 |
| 2 | 9.8 | 25.5 | 20 | 51 |
| 3 | 2.0 | 2.9 | 14 | 20 |
| 4 | 3.3 | 8.0 | 12 | 29 |
| 5 | 5.1 | 14.7 | 14 | 41 |
| 6 | 4.3 | 14.6 | 11 | 37 |
| 7 | 2.9 | 14.8 | 12 | 61 |
| 8 | 29.0 | 111.8 | 40 | 154 |
| 9 | 1.4 | 5.8 | 16 | 67 |
| 10 | 0.2 | 0.4 | 6 | 13 |
| 11 | 0.0 | 0.0 | 0 | 0 |
| Total 11 regions | 105.6 | 330.8 | 29 | 90 |

7.11 The differences in the level of education as they existed in 1950 are exemplified by the data of the folowing tables.

TABLE 14

ECUADOR: PERCENTAGE OF THE POPULATION OF 10 YEARS AND OLDER WHICH IS LITERATE (1950), BY REGIONS

| Region | Percentage of ligerates | Region | Percentage of literates |
|---|---|---|---|
| 1 | 64 | 7 | 51 |
| 2 | 53 | 8 | 58 |
| 3 | 49 | 9 | 71 |
| 4 | 60 | 10 | 39 |
| 5 | 53 | 11 | 31 |
| 6 | 44 | 12 | 81 |
| Ecuador | | | 56 |

TABLE 15

ECUADOR: LEVEL OF EDUCATION REACHED, 1950, BY REGIONS

| Region | Percentage of population that attended one or more years at | | | |
|---|---|---|---|---|
| | Primary school a/ | Secondary school b/ | Technical school b/ | University c/ |
| 1 | 49 | 6.4 | 1.5 | 1.0 |
| 2 | 42 | 2.7 | 0.6 | 0.4 |
| 3 | 38 | 2.5 | 0.7 | 0.3 |
| 4 | 48 | 1.5 | 0.4 | 0.5 |
| 5 | 46 | 2.2 | 0.5 | 0.7 |
| 6 | 38 | 2.5 | 0.5 | 0.4 |
| 7 | 42 | 2.6 | 0.6 | 0.4 |
| 8 | 45 | 7.9 | 1.4 | 1.8 |
| 9 | 51 | 3.0 | 1.0 | 0.3 |
| 10 | 33 | 2.3 | 0.2 | 0.3 |
| 11 | 26 | 2.6 | 0.2 | 0.3 |
| 12 | 62 | 7.5 | 0.9 | 0.5 |
| Ecuador | 45 | 4.5 | 1.0 | 0.9 |

a/ population of 6 years and older
b/ population of 12 years and older
c/ population of 18 years and older

In general, the figures of the two tables point in the direction. Apart from the last three regions (10, 11 and 12) in w particular conditions prevail, we see that on the average the educ nal level is highest in the regions 1,8 and 9, and lowest in the r gions 3 and 6.

7.12 An interesting and important feature of Ecuador's econo is the existence of large population groups that do not form part of the money economy. These groups (often separate trib have very little or no contact with the rest of the economy, and u lly live isolated also in other respect. There is practically n statistical information available about their number in the variou regions. Some idea can be obtained, however, from the results of investigations of the Ecuadorian Institute of Antropology and Geog phy about the size of the indegenous population. On the basis of these data the following table has been computed.

TABLE 16

ECUADOR: ESTIMATED INDIGENOUS POPULATION (LARGELY OUTSIDE THE MONE ECONOMY) (1959)

| Region | Number of inhabitants in 1,000 | Percentage of regional population |
|---|---|---|
| 1. | 2 | 0 |
| 2. | 0 | 0 |
| 3. | 1 | 1 |
| 4. | 18 | 6 |
| 5. | 122 | 34 |
| 6. | 163 | 41 |
| 7 | 85 | 35 |
| 8. | 161 | 22 |
| 9. | 0 | 0 |
| 10 | 23 | 72 |
| 11 | 5 | 83 |
| 12 | 0 | 0 |
| Ecuador | 580 | 16 |

Note: the original figures of the Ecuadorian Institute of Antropol and Geogrphy referred to the year 1959; for reasons of compa they have been estimated for 1955.

As the figures show, virtually all Indians still adhering to their old tribal traditions live in the Sierra and the Oriente. Especially in regions 5, 6 and 8 they are very numerous, although percentage-wise their importance in greater in the two Oriental regions 10 and 11.

7.13 In general, the small farmer and the agricultural labourer do not easily leave their traditional environment. In spite of the inter-regional and intraregional migration that annually is taking place, the supply of agricultural labour in relation to demand differs greatly as between the various regions. This is demonstrated by the figures of Table 17, indicating the average daily wages for (free) labourers in agriculture.

TABLE 17

ECUADOR: AVERAGE DAILY WAGES OF FREE AGRICULTURAL LABOURERS

| Region | Daily wage in Sucres a/ | INDEX (unweighted average=100) |
|---|---|---|
| 1 | 11.5 | 147 |
| 2 | 10.0 | 128 |
| 3 | 14.9 | 191 |
| 4 | 7.4 | 95 |
| 5 | 4.5 | 58 |
| 6 | 4.3 | 55 |
| 7 | 5.0 | 62 |
| 8 | 5.3 | 65 |
| 9 | 7.2 | 92 |

a/ including payment in kind.

7.14 Finally, some facts about the banking system are given in the below tables. The figures of Tables 19 and 20 have been calculated by adding the figures of the individual banks and bank branches located in the region in question. This does not mean, however, that all credit transactions of the banks in a certain region that took place during the reported period in fact had their destina-

tion within the region. The figures, therefore, do not indicate tly the number and volume of credits the various regions received vertheless, by far the larger part of the (regional) banking acti ties does concerne credits to firms or people from the region whe the bank is located. Roughly taken, the figures of the following bles may be used as indicators of available regional banking and dit facilities, albeit only for one year, 1957.

TABLE 18

ECUADOR: BANKS (HEAD OFFICES AND BRANCHES) OPERATING IN ECUADOR, IN 1958, BY REGIONS

| Region | Central Bank | Banco de Fomento | | Private Banks | Total |
|---|---|---|---|---|---|
| | | Branches | Agencies | | |
| 1 | 1 (1) | 5 (1) | 7 | 11 (10) | 24 (1 |
| 2 | 3 | 4 | - | 3 | 10 |
| 3 | 1 | 1 | - | - | 2 |
| 4 | 1 | 1 | 1 | - | 3 |
| 5 | 1 | 2 | 1 | 4 | 8 |
| 6 | - | 2 | 1 | 2 | 5 |
| 7 | - | 1 | - | 2 | 3 |
| 8 | 1 (1) | 3 (1) | 2 | 10 (8) | 16 (1 |
| 9 | 1 | 1 | 1 | - | 3 |
| 10 | - | - | 1 | - | 1 |
| Ecuador | 9 (2) | 20 (2) | 14 | 32 (18) | 75 (2 |

Note: figures in brackets indicate offices located in Guayaquil an Quito.

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As Table 18 indicates, the dispersal of the banks and thei local branches over the various regions is, generally speaking, no bad. There are several regions, however, where no private banks a established; this implies that only a limited scale of banking fac lities are available, i.e. the services offered by the Central Ban and the Development Bank. Accordingly, the number of credit opera tions per inhabitant is far below the national average in these zo In general, relative differences in number and volume of credit op

rations between the country's regions are likely to be substantial.

TABLE 19

ECUADOR: CREDIT OPERATIONS OF THE NATIONAL BANKING SYSTEM DURING 1957, BY REGIONS AND TYPE OF ACTIVITY

| Region | Commerce | Industry | Agriculture | Other activities | Total |
|---|---|---|---|---|---|
| A. Number of credit operations | | | | | |
| 1 | 125.303 | 11.322 | 7.330 | 11.265 | 155.220 |
| 2 | 2.829 | 444 | 14.997 | 50 | 18.320 |
| 3 | 157 | 74 | 690 | 1 | 922 |
| 4 | 118 | 186 | 814 | - | 1.118 |
| 5 | 5.677 | 543 | 3.371 | 613 | 10.204 |
| 6 | 4.926 | 792 | 2.482 | 1 | 8.201 |
| 7 | 6.079 | 174 | 451 | - | 6.704 |
| 8 | 23.670 | 3.601 | 3.146 | 1.018 | 31.435 |
| 9 | 82 | 49 | 536 | - | 667 |
| | 168.841 | 17.185 | 33.817 | 12.948 | 232.791 |
| B. Volume of credit operations, in 1,000 Sucres | | | | | |
| 1 | 1.291.409 | 221.439 | 241.491 | 284.609 | 2.038.948 |
| 2 | 46.407 | 86.009 | 170.602 | 179 | 303.197 |
| 3 | 5.890 | 2.825 | 17.211 | 7 | 25.933 |
| 4 | 1.400 | 1.538 | 14.241 | - | 17.179 |
| 5 | 56.982 | 16.521 | 34.865 | 3.287 | 111.655 |
| 6 | 26.846 | 3.745 | 18.867 | 40 | 49.498 |
| 7 | 43.829 | 4.388 | 5.737 | - | 53.954 |
| 8 | 608.163 | 200.805 | 119.867 | 82.287 | 1.011.122 |
| 9 | 1.866 | 2.391 | 13.714 | - | 17.971 |
| | 2.082.792 | 539.661 | 636.595 | 370.409 | 3.629.457 |

TABLE 20

ECUADOR: CREDIT OPERATIONS OF THE NATIONAL BANKING SYSTEM DURING 195
BY REGIONS

| Region | Number of credit operations per 1,000 inhabitants | Volume of credit per inhabitant, in Sucres |
|---|---|---|
| 1 | 167 | 2.197 |
| 2 | 37 | 608 |
| 3 | 6 | 181 |
| 4 | 4 | 62 |
| 5 | 29 | 314 |
| 6 | 21 | 126 |
| 7 | 28 | 224 |
| 8 | 43 | 1.391 |
| 9 | 8 | 209 |
| **Average nine regions** | 64 | 994 |

## 8. Aims and means of a regional economic policy.

### 8.1. The aims.

Although so far the Government of Ecuador has never stated explicitly the targets of its policy with regard to regional development, statements and policies from recent years suggest that the aims of the Government's development policy (as far as they are relevant to the present analysis) may be summarized in the following three points:

i) to increase per caput income;

ii) to integrate the economy;

iii) to obtain a "reasonably equal" distribution of income over the various parts of the country.

As regards the last point, little has been done in reality; the measures taken to foster the economic development of the provinces Azuay and Cañar are not more than a first step in this direction.

An employment target is not mentioned seperately as it hardly can be considered as an individual aim in Ecuador. A rise in production and income will most probably imply a greater demand for labour; in this way the employment situation is likely to improve gradually when development proceeds. It is difficult to judge existing levels of employment in the various regions, because practically all unemployment is hidden in underemployment. So-called "open" unemployment is almost absent in Ecuador.

It must be noted that the targets mentioned above may be conflicting, at least to some extent. This is especially true for the first and the third target, in the sence that a higher degree of equalization between the regions might reduce the overall rate of increase in income, or -alternatively- that the highest possible rate of increase in total income might only be obtained at the expense of an increasing difference in regional development level. It is a matter of policy to determine the best solution in this respect. In the past, more attention was paid by the Government and its planners to raising the national average than to improving the regional distribution. It seems, therefore, that the aim of making the regional production and income levels less unequal will be pursued only in so far as the required measures have little or no unfavourable effects

upon the overall rate of increase. Regarding the second target, the unification or integration of the economy, there are no points of conflict of any importance between this and the other two aims.

The typical regional aspects are found in the second and third aim. Attention will be paid to these two points in particular. We have to reckon also with the first target, however, in order to make the regional policy to be proposed consistent with the "general" development policy. On the other hand, this "general" development policy -mainly aiming at the first target- is given already (or will be given very soon) in the general plan; the present report does not discuss the national planning as such.

8.2. The means.

Given, then, the targets of the regional development policy, we have to see what are the means available. In addition, we have to know something about the Government's appreciation of the various means.

Starting with the latter question, there can be no doubt about the fact that policy measures implying compulsion (e.g. forced migration) will not be acceptable for the Government of Ecuador. Also, the Governmen is reluctant to take over the rôle of the private entrepreneur (e.g. through establishing Government-owned industries in the most backward area to an appreciable extent. In general, the more the individual freedom of entrepreneurs, investors and labourers is respected by an instrument of regional policy, the higher will be the Government's preference for this instrument.

The means for achieving the integration of a country's economy were mentioned in general terms already in Chapter 4, par. 4.2. In princi all these means seem to be acceptable for the Government of Ecuador. They may be summarized here in short:

i) the construction of roads and other transportation facilities;
ii) the improvement and extension of educational services, especially in the backward areas;
iii) the organization of internal trade and credit systems;
iv) the organization of a nation-wide labour market;
v) the organization of internal capital movements;
vi) the legal and factual abolition of archaic labour and land tenure

systems;

vii) the gradual incorporation of the closed tribal economies in the money economy;

viii) the improvement of the economic infrastructure through other measures than the above indicated (energy; public health), particularly in the less-developed regions.

The measures, it will be clear, are not alternatives; all of them seem to be essential for establishing one national market, in stead of the many local markets existing at present. They are, therefore, not conflicting but reinforce and supplement each other's effect.

The means or instruments which the Government has at its disposal for aiming at the other target of its regional policy, the equalization (to a certain point) of regional income levels, are the following:

1) the location of economic activities:

a) direct Government investments in the backward areas, in particular those in works of infrastructure and in the government enterprises;

b) measeures fostering the movement of so-called location-free enterprises to the lower-income areas;

c) measures fostering the movement of capital to the lower-income areas;

1i) planned migration

As regards these means, they may be used in varying "intensity", so to say; the measures should create at least an incentive to these movements, whereas their strongest application would imply the introduction of a complete government control over the location of enterprises and migration. In the case of Ecuador, the latter policy is unfeasible as well as unacceptable for the Government; the instruments suggested can be applied only to a limited extent, using inducements rather than compulsion.

Obviously, the means listed separately for the two different aims of the regional policy are to some extent connected and not entirely independent. The way in which they are related will be discussed when, in the next chapter, the regional economic policy that seems to be appropriate will be outlined.

## 9. The proposed regional policy for Ecuador

a) The removal of barriers and obstacles for interregional contact.

9.1. The "negative" part of the regional policy, that of removing hinderances which impede the formation of a nation-wide economic unit, is in a sense the easiest part of the policy. The aim is clear; the means are generally excepted and not in conflict with each other. The greatest difficulty is the "timing" of the measures; that is: what is the degree of priority that has to be given to the measures required for the country's integration? And it is exactly about this question that little can be said unless the relative appreciation of this target by the Government of Ecuador is known more precisely. In the present report, therefore the most that can be done is to list the specific means for integration; the decision when and to what extent these means will be used remains entirely with the economic-policy makers, i.e. with the Government.

9.2. Let us see now, as concrete as possible, what measures seem to be the most appropriate ones for achieving the country's economic integration.

The first, and rather obvious, set of measures is that concerning the transport and communications system between the various parts of Ecuador. Of course, improvements should be made everywhere; for the sake of integration, the matters of prime importance are the following:

i) As regards inter-regional roads, the almost complete isolation of Region 3 is the most remarkable fact revealed by Table 10. Construction of one or two all-weather roads connecting this regions with Region 2 (Manabí) and with the northern part of the adjoining Sierra regions would be highly desirable. Apart from freeing the area from its isolation, these roads would open up potentially rich agricultural zones and facilitate migration to this underpopulated region. Less urgent but nevertheless desirable in the future are the connections between Region 4 and Region 5 (Oriente, Gualaquiza) and between Region 10 and Region 11 (to one of the navigable rivers). For the moment it seems more important to pay due attention to improvements and regular

upkeep of the existing inter-regional roads (and to finish the construc cion of the uncompleted ones) than to start the building of new roads, with the exception of the roads to Region 3 proposed above.

ii) the railways could be a valuable means of communication between the regions. At present, however, their importance is limited because of the rather unsatisfactory way they operate. It might be useful to study the present situation carefully and to determine what improvements are required in order to guarantee a safe, regular and efficient operation. If it is unlikely that the railways can ever be run without a (more or less substantial) loss, also after a reorganization, serious attention should be given to the possibility of abandoning the railway system partially or totally. The funds, otherwise needed for covering the railway deficit, could probably be used better in other transportation investments in this case. If, on the other hand, the improved railway system could be run with (almost) balanced accounts, the reorganization should be undertaken as soon as possible. A frequent and uninterrupted service -if economically feasible- of the line Quito-Ibarra-San Lorenzo would be of great importance for Region 3; Region 5 would benefit from a resumption of all services on the branch to Azogues and from a possible extension of this line to Cuenca. However, as in most countries the railways have been losing ground to road transport during many years already, great care should be exercised and painstaking studies undertaken before any decision is taken with the object or investing large amounts in the railway system, either for extension or for rehabilitation.

iii) in view of the increasing importance of air transport in Ecuador as well as in the world in general, great attention should be paid to airports and telecommunications and rather systems for air traffic. Gennerally speaking, the number and location of airports is not bad in Ecuador; the few regions not served by any airline (Regions 6 and 7) are indeed the ones where the need for it seems to be least. Gradually, the airports in the smaller towns should be improved and made accessable during the whole year. In a country like Ecuador, where all types of overland transportation operating in the East-West (or vice-versa)

direction are handicapped because of the immense chain of mountains running North-Soutn in the middle of the country, air transportation is likely to play a very important part in future internal communications. The Government should anxiously keep abreast with future developments that may be expected in this field.

9.3. No doubt, the measures proposed above will tend to stimulate the movement of products as well as of persons. However, additional measures as required. Regarding the movement of products -perhaps the most fundamental point in integration- the greatest difficulties are met in the agricultural sector. Not only the country's integration but indeed the success of the development plan in general seem to depend, to a very large extent, upon the possibilities of increasing the production "for the market". What is necessary, therefore, is the organization of the internal market (in its broadest sense) for agricultural products. This process, sometimes called commercialization, is of utmost importance for the integration of Ecuador's parcelled and atomized economy. A great number of specific measures is involved in the process, and obviously not everything can be done by the Government alone. Yet, Government initiative and active guidance are highly desirable if not indispensable. No details about the Government's policy in this respect can be given here, as the matter is too substantial and complicated to be treated in this report. An excellent study on the subject has been published by the United Nations' Food and Agriculture Organization (FAO) 1/; this study would be a very useful guide for a detailed determination of the appropriate Government action in this field.

The organization of the internal market, giving all agricultural producers the possibility of selling an increasing part of their crop to the now nation-wide market, will not be in itself an incentive strong enough to make the typically indigenous communities of the Sierra and the Oriente enter the money economy. Nevertheless, their incorporation in the national economy is highly desirable, if only for the reason that they

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1/ J.C. Abbott, Marketting problems and improvement programs; Food and Agriculture Organization of United Nations, Rome, 1958.

constitute a rather large portion of the population (see Table 16). The process is essentially a matter of acculturation and therefore a long-term question; this is an additional reason for starting it as soon as possible. A comprehensive approach to these problems is obtained through the so-called community development. So far, this work has been undertaken in Ecuador only in Chimborazo (Region 6) by the Andean Mission; an extension to parts of Region 5 (Azuay and Cañar) is to happen soon. These and similar activities, if well-planned and coordinated, deserve the full support of the Government. Community development should also be introduced in the closed and isolated groups of Indians living in the other regions, particularly in the Sierra-regions 7 and 8; excessive dispersal of the limited resources that are available should be avoided, however.

There is another important obstacle to the orientation of agricultural activities towards production for the market: the present institutional framework of the ownership and forms of tenancy of the land, and the labour relations in agricultural occupations. Conditions prevailing in many parts of the countryside -predominantly in the Sierra regions- are not much better than those of mediaeval Europe. Without going here into details as regards all disadvantages of the existing situation (which impede not only the exchange of products through a market system but also the movement of the labourers and their families), it will be obvious that an agrarian reform is a necessary and essential element of the integration policy. There are, of course, many other factors urging an agrarian reform; they only reinforce the above argument.

9.4. Not only the movement of products but also that of the production factors is an element of economic integration. Let us see now, by what means the internal flows of production factors between the regions of Ecuador can be stimulated. These flows do exist, as is exemplified for instance by Table 3, showing interregional migration. Still, the national labour market is virtually unorganized, and the spontaneous and unguided migration is a risky matter which easily may (and probably often did) end with disapointment and failure. A prerequisite for migration is that the prospective migrant and his family are well informed about the situation in the area to which they want to move. Essential

matters are the labour conditions (Are there vacancies indeed? For what type of work? Is the need only temporary? What are the real daily wages?) and the housing facilities (Can the family immediately move into some place or another? At what costs?). It must be remarked here that it is highly desirable that a married labourer should take his family with him at once. Otherwise, the complete breaking up of the family is only too often the final result of the separation that was intended to be temporary; the economic gain of the movement of labour is in this case more than offset by the social drawbacks.

What is required in this respect is the establishment of a network of labour bureaus, which probably may be incorporated in the Ministry of Social Affairs (Ministerio de Previsión Social). These bureaus should be established in all important centres, to begin with all provincial capitals. Their task would be to bring the available supply of labour in contact with the demand. All labourers looking for another job should be registered, noticing their employment records and other antecedents. Employers, on the other hand, may direct their requests for labourers to these bureaus, which may be able to act as a mediator in this way. In addition, the bureaus should be thoroughly informed about labour conditions in other parts of the country, and advise labourers that want to go to another region. Even if the labour bureaus in the first years of their existence could do not more than providing objective, detailed and reliable information to interested people, they would have made a contribution to the creation of a national labour market. During this initial period, the staffing of these bureaus could be very modest; the choice of the right employees is, however, of crucial importance. A central bureau should coordinate the system, and collect and redistribute the reports of the regional branches.

Another aspect of the integration of the labour market is that in all parts of the country the facilities for primary, secondary and vocational education must be provided, so that no large regional differences in the quality of labour are created or perpetuated, with all their implications. Tables 14 and 15 have shown that the level of education is by no means the same in all regions. Measures should be taken to diminish

in the course of time the regional discrepancies in education and training, as these factors are in the long run major determinants of labour productivity.

9.5. On several points there is a resemblance between the basic framework required for labour movements (the bureaus of labour) and the "infrastructure" for capital flows: a national banking system. Although the existing Ecuadorian banking system shows some gaps as regards its regional distribution -most notably in the Regions 3 and 4, compare Tables18-20- it is in general adequate in view of the regional requirements. The banks (also the Government-owned Development Banks) limit their activities to short-term and medium-term transactions; an organized market for long-term capital does not exist. In this field the two principal measures necessary for a better integration are therefore a) the extension of the banking system in Regions 3 and 4 (and possibly 9) and as soon as feasible in Region 10, and b) the organization of a National stock exchange. As to the first item, what is required is essentially the establishment of at least one private bank; here there is no task for the Government. Regarding the second question, however, the Government may actively foster the organization of a stock exchange, although the cooperation of banks, insurance companies and other large financial institutions is of course indispensable.

9.6. Finally, economic integration implies that entrepreneurs and enterprises must be given in all parts of the country the basic provisions and facilities that are needed for a successful operation. In other words: the existence of the economic infrastructure is a prerequisite for the development of more advanced production techniques. Unless this infrastructure is built up in (selected areas of) all regions, a greater dispersal of the more developed economic activities cannot be expected to materialize without compulsion.

Some important components of the infrastructure have been discussed already in connection with other aspects: transportation, educational services, banking facilities. Other essential matters are the supply of energy and of water, health services, etc. Only about the first item,

energy supply, some data could be included in the study. Table 13 shows that the supply of energy per head of the population is highest in Regions 1 and 8, the regions where at present most of the larger industries are located. The figures do not indicate what part of the capacity is at the disposal for supply of energy for industrial uses, but it may safely be assumed that the energy supply in many regions falls short of demand. This is also true for many of the other requirements. Improvement of all elements of the infrastructure in all regions at the same time is obviously impossible, however. Nevertheless, the Government may try to establish the basis facilities for more advanced economic activities, like e.g. factory production, at least in one or a few economic nuclei in every region. In this way, an important obstacle to starting an enterprise in the previously more isolated areas would have been removed already.

b) Balanced regional economic development.

9.7. Having discussed the integration measures, let us turn now to the second element of the regional policy: how to realize a balanced development of the economic regions in Ecuador, in the sense that the differences in regional per caput income will be brought down and kept between given limits? The instruments for the execution of this part of the regional policy are: i) the movement of enterprises (i.e. entrepreneurs, capital, or both), and ii) the movement of population. Both instruments presuppose an integrated economy; it is impossible to use them without taking first or at the same time the integration measures proposed in the preceding section. Movement of enterprises will be impossible if the economic infrastructure is lacking; migration programmes cannot be satisfactorily formulated and implemented if there is not an organized labour market.

What is, in fact, the situation in Ecuador as regards regional income differences? In table 6 and Table 9 we saw, respectively, the differences in gross product per head existing in 1955, and the situation likely to prevail in 1965 if no particular measures will be taken. The same pattern of inequalities is revealed by both tables. Per caput gross product is in the most prosperous regions (1 and 3) 2.5 to 3 times as

high as in the poorest areas (Regions 4 and 5). For regions 6 and 7 values well below the national average are found. The regions 2 and 9 have per caput figures very close to the nation's average, and regions 8 is definitely better-off than the other areas except regions 1 and 3. Even if we would consider a deviation of 20 per cent from the national average (allowing variation between 80 and 120 per cent) as a minor and irrelevant discrepancy only, not less than 6 out of the 9 regions show a major difference from the country's average income level. The target of the policy discussed in this section is to reduce the discrepancies in per caput gross product and income between the regions. For reasons explained earlier, it is impossible to define the target in a more detailed way. To illustrate the effect of the instruments that may be used, we will make some calculation based on the data for the period 1955-1965 given in the preliminary development plan prepared by the Junta de Planificacion and referred to above already; in reality, the results would have been obtained only if the instruments had been used during the whole period. The tables and figures that follow have only illustrative meaning therefore.

9.8. Let us consider first the effects that may be obtained through stimulating migration. We will compare case 1 in which there is only spontaneous migration (see Tables 3 and 9) with two other alternative situations for the year 1965. In case 2 it is supposed that the number of migrants may be doubled through the Government policy, and that the direction of the movements may be changed slightly (no net emigration from the underpopulated regions 3 and 10+11). In the third case, it is assumed that the rate of migration (with regard to total population) can be raised in Regions 4 and 5 to the same level as that prevailing in Regions 6 and 7 in case 2: in the ten years 1955-1965 total migration will be 15 per cent of the 1955 population or about half the natural population increase during this ten-year period. This rate is supposed to be only 10 per cent in Regions 2 and 9, which is about the same as in case 2. The most important difference is that in case 3 part of the migrants can be induced to go to Regions 3 and 10, instead of Regions 1 and 8 which traditionally received all migrants. Before turning to the question whether or not these population movements are actually feasible, let us see the possible

results of the policy alternatives, in particular the effects on the regional per caput incomes.

TABLE 21

ECUADOR: HYPOTHETICAL DISTRIBUTION OF REGIONAL PER CAPUT GROSS PRODUCT IN 1965 ON DIFFERENT ASSUMPTIONS AS REGARD INTERNAL MIGRATION DURING 1955-1965 (POPULATION MOVEMENTS IN 1,000)

| Region | Case 1 | | Case 2 | | Case 3 | |
|---|---|---|---|---|---|---|
| | number of migrants | per caput gross product | number of migrants | per caput gross product | number of migrants | per caput gross product |
| 1 | + 84 | 134 | +156 | 127 | +150 | 128 |
| 2 | - 22 | 100 | - 44 | 103 | - 50 | 104 |
| 3 | - 6 | 141 | - | 137 | + 35 | 116 |
| 4 | - 16 | 59 | - 32 | 62 | - 42 | 64 |
| 5 | - 24 | 54 | - 48 | 57 | - 53 | 58 |
| 6 | - 30 | 70 | - 60 | 76 | - 60 | 76 |
| 7 | - 18 | 70 | - 36 | 76 | - 36 | 76 |
| 8 | + 37 | 110 | + 72 | 107 | + 60 | 108 |
| 9 | - 4 | 98 | - 8 | 102 | - 9 | 103 |
| 10+11 | - 1 | . | - | . | + 5 | . |
| | ±121 | 100 | ±228 | 100 | ±250 | 100 |

Note: the assumptions underlying the various cases are mentioned in the text.

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A comparison of the figures for case 2 and 3 with those for case 1 shows that the regional distribucion of gross product and income is less uneven in the former two cases, although the remaining differences are substantial. Per caput income would increase in the four most backward regions by almost ten per cent (comparing case 3 with case 1) as a consequence of an active migration policy. Nevertheless, the policy would have to be continued for several decades more before the deviations would be reduced to less than 10 or 15 per cent of the national average. This does not mean that the migration policy is useless, but that this policy has to be supplemented by other measures.

The maximum volume of migration assumed in the above table is 250,000 in ten years. This figure may be considered as realistic and feasible as it implies not more than a doubling of the spontaneous migratory movements. On the other hand, it is unlikely (although not impossible) that a much higher figure can be reached; apart from this inter-regional migration there is a constant and rather strong movement from the rural areas to the local towns and villages which become more and more attractive in the eyes of the countryside people. The number of people leaving their traditional environment is thus much larger than the indicated 250,000 inter-regional migrants. Moreover, it was mentioned already that the Government of Ecuador will not accept any form of forced or compulsory migration; it has for the execution of its migration policy to rely on incentives only. The response to such inducements is usually far from general, and the effect therefore limited.

9.9. As for the measures stimulating migration, the following may be proposed: i) the establishment of bureaus of labour in all regions (see the discussion of this point in the preceding section, par. 9.4). These bureaus should inform prospective migrants about all aspects of the matter, and prepare actual migrations as far as possible. They should administer the financial and other help given as incentives.
ii) the incentives offered may be stated and given in terms of money, land, or both. Usually, the former will be essential. In special cases (particularly in connection with colonization schemes) the provision of dwellings in some way or another may be required. To avoid the major drawbacks of spontaneous migration, it will be necessary to oblige the migrating head of the family to take all his dependents with him; additional (diminishing) payments etc. may be made in respect of the dependents. Another requirement, of course, is that the migrants go "in the right direction" from the regional policy's point of view. The money premium to which a family is entitled should be paid in the new destination, and in several instalments in order to prevent misuse of the incentives through quasi-migration. Likewise, the ownership of the land -if one of the inducements offered- should not be transferred to the migrant without restrictions regarding the sale of the plot etc.

iii) in the case of opening up new uninhabited areas -which is an important aspect of the migration to Regions 3 and 10 in particular- population movements have to be planned very carefully. Also, the incentives offered and facilities provided in this case have to be more and better than for "normal" migration. Selection of migrants will be necessary under these colonization schemes.

9.10. The second instrument for balancing regional development is the location policy with regard to location-free activities. As in the case of migration, we will see first what can be achieved through the use of this instrument, on the basis of two alternative assumptions regarding the "efficiency" of the measures taken. It is supposed that only for the medium-sized and larger industries a deliberate location policy will be possible; this means that an increase in the production of handicrafts and artisans will take place pro rato in the regions where this type of manufacturing was established in the base year, 1955. Therefore, it is only the planned increase in production volume of medium-size and large industries that may be distributed over the regions according to the intentions of the Government, and not even all of this. Part of the production increase is not location-free because of existing idle capacity, very low marginal costs of extension of established enterprises, and similar reasons. The remaining part of the production increase, however, is indeed "susceptible" for the Government's location policy. In case A it is assumed that 20 per cent of the planned increase in production of the medium-size and large industries may be channeled -through appropriate Government measures- into the low income regions; in case B we suppose that this percentage is twice as high, i.e. 40.

These assumptions are not sufficient, however, for determining the future regional per caput incomes. Where are the "displaced" enterprises to be located? Obviously somewhere in the less-developed zones, but the question is to distribute the "available" production volume over these regions. The worst-off regions are 4, 5, 6 and 7; the location-free activities should be directed towards these areas. However, if no compulsion will be used -which may be taken for granted- it seems unlikely

that a sufficient number of entrepreneurs and investors can be induced to go to Region 4. This region has no urban centre of the size and importance of the ones in the other regions; it is the southernmost region of Ecuador and has long and bad connections with the most important consumption centres: Guayaquil and Quito. So far, industry of any importance is lacking almost completely. The other three low-income regions have attracted already various industries, and the possibilities of stimulating industrial settlement in these zones are without any doubt greater here than in Region 4.

Through appropriate Government measures it will be possible to guide, say, 40 per cent of the "available" production increase to Region 5, to Regions 6 and 7 both 25 per cent, and not more than 10 per cent to Region 4. For the moment, we will use this distribution over the regions as the best that can be obtained. Later on, more attention must be given to Region 4 that -on the basis of the present assumption- would remain in a very unfavourable position.

An additional movement of enterprises to the low income regions will happen as a consequence of the movement of manufacturing industries. The establishment of the location-free activities will increase regional income, and therefore augment the demand for various services that have to be provided on the spot. Using the same approach as before (see Appendix D) we may estimate the induced movement of service industries at 56 per cent -measured in contribution to gross product- of the original movement of manufacturing industries.

The effect in quantitative terms of the regional location policy described above on the regional gross product and income levels is indicated in the following table. Index figures of regional per caput gross product in 1965 are given on the assumption that there will be no planned (only spontaneous) migration, case 1 of Table 21.

TABLE 22

ECUADOR: REGIONAL LOCATION POLICY AND ITS EFFECTS ON REGIONAL GROSS PRODUCT IN 1965.

| Region | Change in regional gross product, in percentages | | Index of regional per caput gross product in 1965 | |
|---|---|---|---|---|
| | Case A | Case B | Case A1 | Case B1 |
| 1 | - 3.4 | - 6.8 | 129 | 125 |
| 2 | - 2.9 | - 5.8 | 97 | 94 |
| 3 | - 0.3 | - 0.6 | 140 | 140 |
| 4 | + 6.0 | +12.0 | 63 | 66 |
| 5 | +21.7 | +43.4 | 66 | 77 |
| 6 | + 8.9 | +17.8 | 76 | 82 |
| 7 | +14.2 | +28.4 | 80 | 90 |
| 8 | - 3.5 | - 7.0 | 106 | 102 |
| 9 | - 1.0 | - 2.0 | 97 | 96 |
| | 0 | 0 | 100 | 100 |

Note: "Case A1" denotes a combination of the conditions and assumptions of case A with those of case 1. The cases are described in the text

As the figures of the last two columns of Table 22 show, the effects of location policy certainly diminish the differences in income between the regions; nevertheless the discrepancies remaining after an application of this policy for ten years are still very substantial. Again, we find that the use of one instrument alone will not lead in a period of, say, two or three decades to a situation in which regional figures differ less than 10 per cent from the national average. A combination of measures, both in the field of migration and of industrial location, seems to be a better solution. Before this point is elaborated further, we have to see how the industrial location policy can be implemented.

9.11 The Government measures leading to the desired industrial development of the backward areas may be classified as direct or indirect as regards the way of Government intervention in the economy.

Considering direct measures first, it must be noted at once that the Government of Ecuador in general wants to abstain from all activities traditionally belonging to the private sector. This means that direct investments will be limited almost exclusively to works of infrastructure. It was pointed out above already that the existence of the economic infrastructure is a prerequisite for further development and the establishment of modern industries. In this connection it is necessary to warn against too broad a dispersal of the Government's efforts. It is much more effective to create a more or less "complete" economic infrastructure in one or two small zones than to provide only some of the facilities throughout the whole region. Moreover, industries show a rather strong tendency to cluster together in a few spots; usually -there are, of course, exceptions- the larger the population and industrial centre is, the stronger the preference for locating an enterprise in this centre. For these reasons it is recommended to concentrate in first instance the measures improving or establishing the required basic facilities on a few centres only; the stimulating forces should be focussed on a regional kernel, which in general will be the largest and most-developed town of the region. The best centres seem to be Loja, Cuenca, Riobamba and Ambato, for respectively Regions 4, 5, 6, and 7.

If the Government would be prepared to do a little more than just providing the economic infrastructure -without entering the field of the private entrepreneur, however- it may consider the possibility of establishing an industrial park or industrial estate in each or some of the chosen development centres. An industrial park is a (small) area in which not only the basic facilities for industrial production are available, but also several other, additional facilities that usually are not provided to the industrialist but nevertheless of prime importance for an efficient and economical operation of an enterprise. The most important example in this respect is the provision of a factory or a workshop to the entrepreneur, who can buy the services of these facilities, i.e. rent his production space in stead of building it himself. Other additional facilities often provided are i.e. specialized equipment for common use, expert advice on technical or economic matters, a common sales and transport

organization, etc.. Through these facilities, which can be provided at low cost because of the economies of scale in their production, an industrial park becomes a very attractive location point for most industries. It is an interesting and useful means for attracting industry to a particular area, and it has been applied successfully in many countries as one of the tools for industrializing backward regions.

Another, but quite distinct, direct measure at the disposal of the Government is the introduction of a system of more or less complete regulation and reglamentation of industrial location. Under such a system, entrepreneurs could be obliged to obtain a Government license before starting or expanding a business. A license would be given, then, only if the enterprise would be established in one of the less-developed regions. This policy may be applied to all or only to part of the (industrial) activities. Because of the great difficulties of using this measures in such a way that no damage is done to overall economic development, a policy relying on this kind of measures cannot be recommended, for the time being, to the Government of Ecuador.

To a large extent, the Government will have to implement its location policy with the help of indirect measures. Here a large number of possibilities exists; many of them -probably the most important ones- give the enterprises that will be located in the low-income regions some sort of financial advantage, either an one-time advantage or a lasting benefit. First, taxes may be made lower in the poorer regions than in the more advanced areas (e.g. no import duties on imported raw materials and investment goods used in the backward regions; lower income tax for owners-entrepreneurs and companies, i.a. through tax exemption for re-invested profits). Second, other costs may be lowered through Government subsidies. These subsidies may be paid directly to the enterprise itself (e.g. part of the cost of the land; part of the building costs; even part of the wage bill of the enterprise) or to other enterprises providing basic services at an economically too low price (e.g. energy plants). Third, many additional stimulating measures are feasible, like a Government guarantee for loans to entrepreneurs and enterprises willing to go to the less-developed areas, or a preferential treatment of these

enterprises if Government orders have to be placed.

These indirect measures will have to be discriminating in respect of the type, size and location of the activity in question. They should be made to apply only to those activities of which the establishment in the relevant area is desired. The financial incentives offered should be greater the larger the enterprise is; the best yard-stick of its economic and social importance will be the number of people to be employed. The inducements need to be stronger in the regions with the lowest per caput income (within the group of less-developed regions); in Ecuador, the incentives for locating a business in Region 4 or 5 have to be stronger than the ones offered for Region 6 or 7. Another important point is that it may be judged advisable to grant some or all of the relative advantages also to the already established enterprises in order to improve their competitive position. Anyhow, the inducements should not only apply to new enterprises, but also to (substantial) extensions of established enterprises.

One of the fundamental problems of the use of indirect measures is the uncertainty about their effectiveness. Of course, the actual application will give this information about the effects after some time, but in this way the best combination and the required "intensity" of the individual measures can be determined only through a long process of trial and error. On the basis of the experience of other countries it seems to be improbable, however, that incentives alone will cause a movement of enterprises on such a large scale that the conditions of case B (movement of 40 per cent of location-free new enterprises) will be satisfied. A policy based almost entirely on inducements most probably will not lead -unless the inducements are very strong indeed- to movements larger than those assumed in case A above.

9.12 From the discussion of the specific measures required for the use of the two instruments of the Government's policy aiming at balanced regional development (migration, and location of industry) it is evident that the instruments are not conflicting, in general. It may be argued that a region which is left every year by a fair number of

migrants is not very attractive as a location area for new enterprises. There is some truth in this statement, but it hardly applies to Ecuadorian conditions as

i) migration reduces the volume of unemployment but not the regional purchasing power;

ii) migration from the poorer regions will reduce but not offset regional population growth, so that there will not be a stagnant population;

iii) supply or labour will remain ample in spite of migration.

A combined use of both instruments is very well possible. It is, in fact, the only way in which the target of a more or less equal distribution of per caput income over the regions can be obtained in a shorter period and with less undesirable side-effects. Table 23 gives a more concrete picture of the possible results of a simultaneous use of both means. The situation that would prevail if no measures at all were taken is mentioned also for comparison.

TABLE 23

ECUADOR: POSSIBLE EFFECTS OF A COMBINED MIGRATION AND INDUSTRIAL LOCATION POLICY ON REGIONAL PER CAPUT GROSS PRODUCT IN 1965

| Region | Index of regional per caput gross product in 1965 | | | | |
|---|---|---|---|---|---|
| | No policy | Case A2 | Case B2 | Case A3 | Case B3 |
| 1 | 134 | 123 | 118 | 124 | 119 |
| 2 | 100 | 100 | 97 | 101 | 98 |
| 3 | 141 | 136 | 136 | 116 | 115 |
| 4 | 59 | 66 | 69 | 68 | 72 |
| 5 | 54 | 69 | 82 | 71 | 84 |
| 6 | 70 | 83 | 89 | 83 | 89 |
| 7 | 70 | 87 | 98 | 87 | 98 |
| 8 | 110 | 103 | 99 | 104 | 100 |
| 9 | 98 | 101 | 100 | 102 | 101 |
| | 100 | 100 | 100 | 100 | 100 |

Note: "Case A2" denotes a combination of the conditions and assumptions of case A with those of case 2; etc. The cases are described in the text.

The table shows that the remaining discrepancies between the regions will be smallest in case B3 (planned and guided migration together with a very "strong" industrial location policy). However, if the Government wants to abstain from a more direct control over industrial location, the best that can be realized is Case A3 (planned and guided migration together with an "indirect" industrial location policy). The difference between this case and the situation of "no policy" is very considerable. The average of the index figures of the two highest regions is brought down by 17 points; the corresponding figure for the two poorest areas is raised by 13 points. Comparison with the index figures for the base year 1955 (Table 6) reveals that in another decade after 1965, differences could be reduced to not more than 10 per cent from the national average. The target of removing the great discrepancies in regional income per head could be obtained in 20 to 25 years therefore, at least for eight of the more important regions of Ecuador. The sole exception -as far as the nine populous regions are concerned- is Region 4, which has at the moment little prospects for a successful industrialization. The region deserves for this reason the particular atention of the Government. The agricultural development should be stimulated as much as possible. Mining possibilities (for mineral ore especially) may have a strong favourable impact in the future on the economy of this region (and Region 5), and the Government should be aware of the importance of these natural resources for the development of this region.

9.13. In conclusion, it may be repeated that for achieving the second target of the regional development policy (a balanced regional development), the appropriate Government policy will be the combined and simultaneous use of both instruments available (migration and industrial location). Both instruments presuppose, however, the existence of an integrated national economy, which was discussed in the present study as the first target of the regional policy. This point exemplifies that, notwithstanding the above distinction between two different targets, there is only one regional development policy which has to be consistent in all its details. Also, in a broader framework, the regional policy itself should be given its proper place as part of the general development planning.

## 10. Summary of recommendations

### 10.1. Integration of the national economy.

i) The finishing of the inter-regional roads under construction and the improvement and maintenance of existing roads should be given priority over the construction of new inter-regional roads, except for new roads to Region 3 (Manabí-Esmeraldas and Sierra-Esmeraldas) which are essential for a better incorporation of this region in the national economy.

ii) Reorganization and full rehabilitation of the country's railways, but only after detailed studies and expert's advice about the future possibilities of running the system without heavy losses.

iii) Provision of the basic facilities and services required for the further development of air transportation.

iv) Improvement of the organization of the internal market, particularly for agricultural products.

v) Promotion of the community development activities (Andean Mission) amongst the indigenous Indians living outside the money economy.

vi) Realization of the plans for an agrarian reform.

vii) Organization of the national labour market through the establishment of bureaus of labour.

viii) Provision of educational facilities (also lower technical schools) in all parts of the country.

ix) Organization of a national capital market, and improvement of the geographical dispersal of the banking system.

x) Provision or improvement of other elements of the economic infrastructure (energy; health services) in those parts of the country where they are lacking or inadequate.

### 10.2. Balanced regional development.

i) Stimulation of planned migration from the poorer regions to the more prosperous ones, in particular from Regions 4,5,6 and 7 (Provinces of Loja, Azuay, Cañar, Bolívar, Chimborazo and Tungurahua) to Regions 1 and 3 (El Oro, Guayas, Los Ríos, and Esmeraldas).

ii) Stimulation of the movement of enterprises (entrepreneurs and capital) to the poorer regions, especially to Regions 4 and 5 (Provinces of Loja, Azuay and Southern Cañar) but also to Regions 6 and 7 (Northern Cañar, Bolívar, Chimborazo and Tungurahua).

## APPENDIX A

## A CALCULATION SCHEME FOR ESTIMATING FUTURE REGIONAL DEVELOPMENT

1. We will not introduce a refined mathematical model but confine ourselves to a calculation method approximating the desired analytical process. The method will inevitably be more rough and less elegant than the one that uses a model in which the relationships existing in reality can be taken into account simultaneously. The method that will be introduced below has been developed by Professor J. Tinbergen 1/. The following pages are based on his paper; only some minor changes and several additions have been made.

2. The basic underlying idea of the method is that it is possible to influence the degree of economic development of the different regions of a country by regulating the distribution of location-free types of activity over the various regions. Let us consider first what is meant by a location-free activity, and what other types exist. The following division seems useful in this respect:

A: Location -fixed activities;
A1: Location-fixed primary activities;
A2: Secondary activities (population-fixed)
B: Non-location-fixed activities.

By location-fixed activities we mean those production processes (in economic sense) that are tied to a specific location for reasons inherent to the production process or the product, like e.g. agriculture and mining (soil), harbour services (sea or deep rivers), hydroelectricity plant (constant water supply), etc. Another group of location-fixed activities is formed by the activities that are not physically tied to a certain spot but for which the costs of transportation of the product are prohibitive or at least very high in relation to the value of the product; they will be located near the centre of consumption, and therefore, in general, follow the distribution of population. Examples are: retail trade,

1/ Jan Tinbergen, How to split up a plan into its geographical components. Mimeographed; unpublished.

all service industries, and building industry. The second group could be described as population-fixed, and consists of the socalled secondary activities. The first category, on the other hand, includes primary activities (characterised by the fact that their product is marketed over a larger area than that of the immediate neighbourhood). The non-location-fixed activities, too, are primary activities; they comprise of the majority of manufacturing industries.

Although the distinction between the various types of activity is a clear and rather usual one, some difficulties may arise when the actual division has to be made in practice. Great factual knowledge will be required. Sometimes an industry will belong partly to the primary type and partly to the secondary type of activity, like e.g. trade, and transportation. There are however, several ways in which a not too rough estimate in these and analogous cases can be made about the appropriate distribution over the different classes.

3. We make the following assumptions before introducing the method and giving a numerical example of the calculation:

i) the general targets of the plan, i.e. the increase in production in the various types of activity, are given.

ii) the distribution of the working population of each region over the types of activity is known. Moreover, we suppose at this stage that there is no migration, and that the above-mentioned distribution of the working population is constant.

iii) the general plan gives already a regional breakdown of part of the location-fixed primary activities on the basis of technical data regarding the decisive location factors.

4. In connection with the third assumption it will be known, for instance, that mining or agriculture will be developed especially in certain areas where mineral deposits are richer of where prospects at successful irrigation are brighter than elsewhere 2/. To the extent that such knowledge is already available it should be used and the rates of growth for the industries concerned should be therefore taken from that

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2/ The sections 4 to 7 have been taken over from Jan Tinbergen, op. cit., almost without any change.

source. To the extent that such knowledge is not available a uniform rate of growth should be applied for all regions. Calling the two sections of activity A1 where this knowledge is and is not available A1a and A1b, respectively, we can state that in both cases the rates of growth are known; for A1a they are different between the regions and for A1b they are equal and hence equal to the general average, known from the plan.

5. The rates of growth of the secondary location-fixed activities (A2) cannot be chosen before-hand. They will have to follow from the rise in income in the regions and this is only determined after the rates of growth in the remaining category of non-location-fixed activities (B) is fixed. These activities can be used to influence the distribution of income and even population, if migration were supposed to be desirable. Suppose it is considered desirable that the rate of increase in income per head of the various regions be equal. If then some regions show a more rapid development in the location-fixed activities they could be given a smaller proportion of the non-location-fixed ones. If, on the other hand, the government wants to accelerate the development of certain backward areas it may be that the B activities be allocated in a relatively higher proportion to these regions. Evidently it depends on the percentage of population working in these activities what can be done.

There are certain limits. It may be that A activities from such a high proportion of the population of a certain region and that such a rapid development is desired for that region (because of favourable natural conditions) that even without any further activity B the region would already show a rate of development in income above the general average. Then equalization of that rate is only possible by admitting migration into that region.

6. We may now, by way of an example, show what type of calculations may be used in order to arrive at the geographical breakdown of the plan. In order to do so we have to know how the rate of increase of the demand for secondary (location-fixed) activities depends on the rate of increase in income. We assume that the income elasticity of such activities is e. Calling the rate of increase of income per head x, we will expect

a rate of increase in the demand for secondary activities equal to ex.

We shall now discuss our numerical example, the figures of which are to be found in Table A. All figures supposed to be known from the overall plan are presented in the upper part (lines 1-13). Columns S, T and U refer to regions, column "Total" to the country as a whole. Population increases are first shown, resulting in line 3. Lines 4-7 give the composition of the working population now. These percentages have been applied to the population of the plan year (i.e. on line 3) and multiplied by the average per caput income characteristic for the four activities (as mentioned under 1) in the Total column), leading to lines 8-12 (columns S, T, U). This set of figures therefore indicates what would be the total incomes per region and per activity if a growth of income proportional to population only would be obtained. Figures under 2) in the Total column (lines 4-7) indicate the growth per head of total population planned for the four activities. If these growth rates are applied to figures 3) in the Total column, figures 4) are obtained. Figures 3) are horizontal totals of the corresponding lines, i.e. country totals for income in case of growth proportional to population only. Figures 4) therefore represent the planned production (or incomes) of the four activities for the country as a whole. Their regional breakdown is our problem. The only further data at our disposal are those given in line 13: the rates of development (per head of total population of region) for activities A1a in the regions. These were supposed to be given as a consequence of knowledge on the relative technical merits of the projects in each area.

7. The calculations on the basis of the principles enumerated in paragraph 5 are now to be found in lines 14-21 of the table. Line 14 follows from the application of line 13 to the figures of line 8. Line 15 follows from the application to line 9 of the uniform growth percentage of 15, mentioned in the very last column of line 5 (under 2). Lines 16, 17 and 18 indicate the formula to be applied to activities A2 and B and the total of regional income, respectively. Here $x_1$ indicates the rate of growth (on top of the population increase of the region) of region S income, $x_2$ the corresponding rate for region T and $x_3$ the one for region U. The symbol e was explained in paragraph 6. It may now be given numerical

TABLE A

EXAMPLE OF METHOD FOR THE CALCULATION OF A REGIONAL BREAKDOWN OF A PLAN

| | | Region | | S | T | U | Total | |
|---|---|---|---|---|---|---|---|---|
| GIVEN BY PLAN | 1. | Population now | | 105 | 192 | 47 | 344 | |
| | 2. | Rate of increase | | 5% | 4% | 6% | 4.7% | |
| | 3. | Population plan year | | 110 | 200 | 50 | 360 | |
| | 4. | Composition | A1a | 46% | 10% | 20% | 1) 1.0 | 2) 10% |
| | 5. | of working | A1b | 9% | 40% | 10% | 0.8 | 15% |
| | 6. | population | A2 | 27% | 30% | 30% | 1.1 | 10% |
| | 7. | now | B | 18% | 20% | 40% | 1.2 | 30% |
| | 8. | Population | A1a | 50 | 20 | 10 | 3) 80 | 4) 88 |
| | 9. | in plan year | A1b | 8 | 64 | 4 | 76 | 87.4 |
| | 10. | weighted with | A2 | 33 | 66 | 16.5 | 115.5 | 127.1 |
| | 11. | income now | B | 24 | 48 | 24 | 96 | 124.8 |
| | 12. | | Total | 115 | 198 | 54.5 | 367.5 | 427.3 |
| | 13. | Desirable rate of development in | A1a | 14% | 0% | 10% | average: 10% | |
| TO BE CALCULATED | 14. | Total income | A1a | 57 | 20 | 11 | 88 | |
| | 15. | in plan year | A1b | 9.2 | 73.6 | 4.6 | 87.4 | |
| | 16. | The same, in | A2 | $33(1+ex_1)$ | $66(1+ex_2)$ | $16.5(1+ex_3)$ | | |
| | 17. | formulae | B | $24(1+y_1)$ | $48(1+y_2)$ | $24\ (1+y_3)$ | | |
| | 18. | | Total | $115(1+x_1)$ | $198(1+x_2)$ | $54.5(1+x_3)$ | | |
| | 19. | The same, in | A2 | 36.3 | 72.6 | 18.2 | 127.1 | |
| | 20. | figures | B | 31 | 64 | 29.5 | 124.5 | |
| | 21. | | Total | 134 | 231 | 63.4 | 427 | |

Notes: 1) Average incomes per head for 4 activities. 2) Rate of increase in production per head. 3) Total income in plan year if growth is proportional to population only. 4) Actual income for plan year.

value by comparing the rate of growth planned for activity A2 (10% above general population growth) with the rate of growth)of income as a whole. This will be found from a comparison of the two last figures on line 12, and appears to be $\frac{427.3}{367.5} - 1 = 0.163$. The elasticity of secondary activities with respect to total income e therefore equals $\frac{0.10}{0.163} = 0.62$. The symbol $y_1$, $y_2$ and $y_3$ finally represent the rate of growth (above population growth of activities B.

We have six unknowns x and y between which four equations have to be satisfied, namely:

i) the totals of line 18 have to be equal to the sum of the lines 14-17 for each region (3 equations) and

ii) the horizontal total of line 18 has to be equal to 427.3, being the total planned income for the country.

We are free therefore to choose two further relations. They could be, e.g., $x_1 = x_2$ and $x_1 = x_3$, meaning that the relative increase in per caput income would be equal in all regions. This has been assumed in the lines 19,20 and 21, where (apart from rounding differences) the figures in the total column are equal to those given under 4) (lines 10, 11, 12).

8. In applying the method to a country with great regional differences, the aim will be to increase income more rapidly in the less prosperous areas. It is again a matter of policy to what extent per caput incomes should be made equal. Moreover, we have to keep in mind that other instruments than the location of activities may be necessary in some cases, as was mentioned already in paragraph 5. Attention should be paid therefore to migration and its effects, and also to changes in the occupational distribucion of population. Finally, we have to see in what way the integration measures of the first type (removal of regional barriers) are included in the method. Let us analyze now how the above points can be incorporated in the outlined method.

9. The integration measures aiming at the elimination of obstacles or hinderances to inter-regional economic contact can be brought into the scheme on two points. As regards their direct impact upon the regional economy, that is, their direct contribution to total

production they may be included in the location-fixed primary activities (although they are usually not of a primary character as such) of type A1a. More difficult to measure are the indirect effects like e.g. better education or an enlarged and improved road net-work. To the extent that the improved conditions will increase productivity of the already existing activities, it could be estimated how much this would reduce the income gap between this and the other regions, or, in general, how large the resulting increase in income would be. Obviously, this is an extremely rough procedure. Besides, it seems to be more appropriate to consider the removal of obstacles as a condition sine qua non for the establishment of new activities, in which case the effects of these measures are included in the consequences of the creation or expansion of industries. In this case the indirect results of this type of integration projects should not enter explicitly in the scheme.

10. The occupational distribution of the employed population will, of course, not be constant in the course of time. A distribution different from the existing one could be assumed for the plan year; the calculation can be based on the new distribution, if the rates of increase in production per labourer (column 2) in Table A are changed accordingly. The direction in which the composition of labour population will change is indicated to some extent by the results of the method if applied on the basis of the present distribution. Suppose, for instance, that we find that production per head in activity B will have to increase by, say, 40 per cent, and in activity A1a only by 5 per cent. Most probable there will be a higher increase in labour population in activity B than in activity A1a. We could, then, repeat the calculation assuming a higher percentage for B and a lower one for A1a 3/. However, the value of these corrections is rather limited. First of all, one should be aware of the fact that the supposedly constant occupational distribution only is a approximating

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3/ This is one of the drawbacks of a calculation scheme as compared with a complete model. Here a process of successive approximations is required, whereas in a model these adjustments are made (if desired) simultaneously.

calculation technique which does not imply that there are no changes in actual life. Moreover, the movement of labour from one type of activity to another must be really substantial if the percentages have to change significantly. Also, if the changes in various regions are in the same direction they will offset each other in the sense that the relative position of the regions as regards their per caput income will change very little. Therefore, the results of the method will not differ considerably as regards the practice followed with respect to the distribution of labour. The latter does play an important rôle, however, in checking the results of the method in view of their feasibility. We will discuss this point later on.

11. How to include migration in the scheme? The simplest way is to change the percentage of population growth according to the most probable pattern and size of migration movements. Again, the desired pattern of migration will be indicated by the results of a first application of the method. As we mentioned earlier already, a region might have so many natural advantages that it attracts such a large share of the location-fixed primary activities (A1a) that its average income per head will be higher than that of other regions in spite of the allocation pattern of location-free activities. If the method points in this direction, we should analyse to what extent migration could take place, compensating more or less the difference in per caput income. The calculation then can be repeated on the basis of a new set of population increase data. We should realize, in the mean time, that we take into account in this way only the quantitative effects of migration. We may take it for granted, however, that those effects will be more important than the qualitative, selective effects of migration, especially when the movements are not sizable.

12. Several times the fact has been mentioned that the method will give a satisfactory result only if it is applied a few times in succession, that is, every time based on an improved set of data obtained from the previous calculation. The reason for this is that the method is only part of a model, so to say, and not a complete model. We have therefore to proceed by a trial-and-error process. A few examples may be given here. Suppose that our target as regards regional distribution of income

increases is given (the equations $x_1 = x_2$ and $x_1 = x_3$ in the numerical example). Now we may find one or more of the following results:

i) the required increase in location-free activities (B) has to be negative. This will usually be an impossible or undesirable thing to realize.

ii) the required increase in an activity exceeds greatly the manpower available for the activity. In each individual case we have to decide whether or not the required increase is feasible in view of the shift in labour population that is possible, and the expected rise in productivity.

iii) the required migration may be too large in size to be practicable or desirable. This is, to a great extent, a matter of policy.

In each of the above cases we have to make some corrections, either by trying another combination of measures (movement of industry and movement of people are to some degree alternatives), or by introducing "boundary conditions" (minimum rate of increase is zero but not negative), or by changing (lowering) our targets. The optimum solution is only found by trial and error, comparing every time the results with the detailed aims of economic policy, or, more precisely, with the value judgements of the policy maker.

13. Some additional remarks about the actual application of the method have to be made. One thing will be clear without further discussion: the calculation scheme gives a very rough indication only. Its result must be supplemented by a careful analysis in bringing it down to the level of individual projects. Because of its approximative nature, a continuous control and correction of the results seems highly advisable. Moreover, future development trends of, for instance, the regional terms of trade, have not been incorporated in the method. A regular revision and recalculation is required also for this reason.

14. Great attention should be paid to a realistic division of industries, etc. over the various "activities". A further subdivision of some types of activity is strongly recommended, specially if the average income differs greatly between various industries belonging to

the same type of activity. The type A1a, for instance, could be divided in agriculture and non-agriculture. Agriculture itself may be subdivided in agriculture for national consumption (of which a great part often is autoconsumtion) and agriculture for export, as the latter is likely to be more remunerative than the former. Besides, all possible efforts should be made to increase the scope of type A1a-activities, and to reduce A1b. A survery of the country's natural resources and their location is indispensable in this respect. In addition to these facts, all information about locational advantages of a certain industry should be collected and used. An important point here is the existence of excess or idle capacity. If unused capacity exists in a region, industry should be allocated to this region at least in such a size that the idle capacity will be used (again).

15. If the final regional pattern of production has been determined, the distribution of the required production capacity has to be calculated along the lines of the overall plan, taking into account again idle capacity that might exist. These results should be scrutinized as regards the resulting size of the firms; in some industries, where economies of large-scale production or other indivisibilities are important, production should be concentrated in one or a few plants only in order to avoid high production costs. If necessary, the results of the calculation should be corrected and modified in the indicated sense.

# APPENDIX B

## DESCRIPTION OF THE AREA INCLUDED IN THE ECONOMIC REGIONS OF ECUADOR

### REGION 1

**Provincia de Bolívar**

Cantón Chimbo:

Parroquias: San Antonio
Telimbela

Cantón San Miguel:

Parroquias: Balzapamba
San José del Tambo

Cantón Guaranda:

Parroquias: Facundo Vela
Echeandía

**Provincia del Cañar**

Cantón Cañar:

Parroquias: Chontamarca
Manuel J. Calle
San Antonio

**Provincia del Pichincha**

Cantón Quito:

Parroquia: Santo Domingo de los Colorados

**Provincia de Manabí**

Cantón Chone:

Parroquias: Flavio Alfaro
Ricaurte

Cantón Bolívar:

Parroquias: Pichincha
Quiroga

**Provincia de los Ríos**

**Provincia del Guayas**

Cantón Balzar

Cantón Daule: All, except:
Pedro Carbo
Isidro Ayora o Soledad

Cantón Guayaquil:

Parroquias: J.G. Rendón
Morro
Playas

Cantón Milagro

Cantón Yaguachi

Cantón Samborondón

Provincia de El Oro

Cantón Arenillas

Cantón Machala

Cantón Piñas

Cantón Pasaje:

Parroquias: Pasaje
La Peaña
Buenavista

Cantón Santa Rosa

Cantón Zaruma:

Parroquias: Ayapamba
Zaruma
Pacocha

Provincia del Cotopaxi

Cantón Pangua

Cantón Pujilí:

Parroquia: Tingo

Cantón Latacunga:

Parroquia: Pucayacu

REGION 2

Provincia de Manabí

Cantón Sucre:

Parroquias: Bahía de Caráquez (L.Plaza Gutiérrez)
Charapotó

Cantón Rocafuerte:

Parroquias: Bachillero
La Estancilla
Rocafuerte
Tosagua

Can[illegible]:

[illegible]

Cantón Chone:

Parroquias: Canuto
Chone (Santa Rita)
Boyacá
San Antonio del Peludo

Cantón Bolívar

Parroquias: Calceta

Cantón Junín:

Parroquia: Junín

Cantón Portoviejo

Cantón Santa Ana

Cantón 24 de Mayo

Cantón Paján

Cantón Manta

Cantón Montecristi

Cantón Jipijapa

Provincia del Guayas

Cantón Santa Elena:

Cantón Daule:

Parroquias: Pedro Carbo
Isidro Ayora (Soledad)

Cantón Guayaquil:

Parroquias: Juan Gómez Rendón (Progreso)
Playas (Sucursal Villamil)
Morro

Cantón Salinas

REGION 3

Provincia de Esmeraldas

Provincia de Imbabura

Cantón Ibarra:

Parroquia: Lita

Cantón Cotacachi:

Parroquia: García Moreno (Llurimagua)

Cantón Otavalo:

Parroquia: Selva Alegre

Provincia de Pichincha

Cantón Quito:

Parroquias: Gualea
Pacto
Nanegal
Nanegalito
Mindo

Provincia de Manabí

Cantón Sucre:

Parroquias: All, except: Bahía de Caráquez (L. Plaza Gutiérrez)
Charapotó

Cantón Chone:

Parroquias: Convento
Eloy Alfaro

REGION 4

Provincia de Loja

Provincia de Zamora Chinchipe

Provincia de El Oro

Cantón Zaruma:

Parroquias: Abañín
Guanazán
Huertas
Malvas
Curtincapa
Salatí

Cantón Pasaje:

Parroquia: Chilla

REGION 5

Provincia del Azuay

Provincia de Morona Sangiago

Cantón Gualaquiza

Cantón Limón Indanza

Cantón Santiago:

Parroquia: Copal

Provincia de Cañar

Cantón Azogues:
Parroquias: All, except: Rivera
Cantón Biblián

REGION 6

Provincia del Cañar

Cantón Cañar:

Parroquias: All, except: San Antonio
Chontamarca
Manuel J. Calle

Cantón Azogues:

Parroquia: Rivera

Provincia del Chimborazo

Provincia de Bolívar

Cantón Guaranda:

Parroquias: All, except: Echeandía
Facundo Vela

Cantón Chimbo:

Parroquias: Asunción (Azancato)
Magdalena (Chapacoto)
San José
San Sebastián

Cantón San Miguel:

Parroquias: All, except: Balzapamba
San José del Tambo

Provincia de Cotopaxi

Cantón Pujilí:

Parroquia: Angamarca

REGION 7

Provincia del Tungurahua

Provincia de Cotopaxi

Cantón Salcedo

REGION 8

Provincia de Cotopaxi

Cantón Pujilí:

Parroquias: All, except: Angamarca
Tingo

Cantón Latacunga:

Parroquias: All, except: Pucayacu

Cantón Saquisilí

Provincia del Pichincha

The whole province, except:

Cantón Quito:

Parroquias: Pacto
Gualea
Santo Domingo de los Colorados
Nanegal
Nanegalito
Mindo

Provincia de Imbabura

The whole province, except:

Cantón Ibarra:

Parroquia: Lita

Cantón Cotacacha:

Parroquia: García Moreno (Llurimagua)

Cantón Otavalo:

Parroquia: Selva Alegre (San Miguel)

Provincia de Napo Pastaza

Cantón Sucumbíos:

Parroquias: El Playón de San Francisco
La Bonita

Cantón Quijos

REGION 9

Provincia del Carchi

REGION 10

Provincia de Napo Pastaza

Cantón Sucumbíos:

Parroquias: Santa Bárbara
Santa Rosa de Sucumbíos

Cantón Napo

Cantón Pastaza:

Parroquias: Canelos
Puyo
Tarqui
Vera Cruz (Indiyana)
Mera

Provincia de Morona Santiago

Cantón Morona:

Parroquias: All, except: Huasaga

Cantón Santiago:

Parroquias: All, except: Copal

REGION 11

Provincia de Napo Pastaza

Cantón Sucumbíos:

Parroquias: Cuyabeno
Farfán
Putumayo
Sigüe

Cantón Aguarico

Cantón Pastaza:

Parroquias: Andoas (Montalvo)
Río Corrientes
Río Tigre
Sarayacu

Provincia de Morona Santiago

Cantón Morona:

Parroquia: Huasaga

REGION 12

Archipiélago de Colón (Islas Galápagos)

# APPENDIX C

## GROSS INTERNAL PRODUCT BY SECTORS AND ECONOMIC REGIONS, IN 1955. (in millions of sucres)

| SECTOR \ REGION | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|
| Agriculture etc. | 1317.9 | 533.7 | 470.9 | 221.2 | 159.9 | 345.5 | 151.9 | 314.7 | 82.3 | 3598.0 |
| Mining | 9.3 | 174.5 | 0.3 | 1.3 | 6.8 | 4.0 | 2.4 | 24.7 | 2.3 | 225.6 |
| Manufacturing industry | 592.6 | 193.7 | 12.6 | 43.1 | 102.3 | 69.7 | 64.6 | 424.4 | 22.1 | 1525.1 |
| Construction | 86.1 | 28.1 | 7.0 | 15.3 | 22.2 | 24.3 | 20.8 | 98.4 | 7.5 | 309.7 |
| Public Utilities | 30.5 | 5.6 | 0.7 | 1.9 | 4.8 | 3.8 | 2.8 | 28.5 | 1.4 | 80.0 |
| Transportation | 203.0 | 52.0 | 16.2 | 12.5 | 23.8 | 43.0 | 23.3 | 126.0 | 7.2 | 507.0 |
| Trade | 544.8 | 99.1 | 27.8 | 38.4 | 53.1 | 62.8 | 57.0 | 361.3 | 20.8 | 1265.1 |
| Banking | 71.4 | 10.5 | 3.2 | 2.2 | 5.8 | 5.1 | 2.4 | 70.7 | 1.6 | 172.9 |
| Housing | 286.1 | 70.2 | 11.6 | 25.4 | 38.4 | 47.6 | 34.7 | 235.7 | 18.3 | 768.0 |
| Government | 183.8 | 43.6 | 13.0 | 23.4 | 35.0 | 37.7 | 25.0 | 223.9 | 14.4 | 599.8 |
| Services | 271.6 | 81.1 | 26.7 | 49.9 | 52.2 | 62.6 | 46.1 | 279.9 | 21.7 | 891.8 |
| TOTAL | 3597.1 | 1292.1 | 590.1 | 434.6 | 504.3 | 706.1 | 431.0 | 2188.2 | 199.6 | 9943.0 |

## APPENDIX D

### THE METHOD USED FOR ESTIMATING 1965 REGIONAL GROSS PRODUCT

The method used for estimating 1965 regional gross product may be described brefly as follows:

i) for all products and all activities it is assumed that a given rate of increase of production in the decade 1955-1965 is accompanied by an increase in value added (or gross product) at the same rate;

ii) all prices are expected to remain constant (or to change all by the same percentage), except for the prices of coffee and cacao which are supposed to deteriorate by 25 and 10 per cent, respectively, in comparison with their 1955 price level;

iii) the value of total agricultural production will rise by 45 per cent. The distribution of the increase over the regions has been calculated for each product separately, assuming that the rate of increase will be the same in all regions producing the particular commodity. An exception was made for bananas, as there are clear indications that expansion is greater in region 1 (especially in Quevedo) than in region 3.

iv) as regards mining industry, the oil industry is expected to expand its production by 60 per cent, and the other mining enterprises by 20 per cent.

v) manufacturing industries are planned to double the value of their production between 1955 and 1965. The applied growth rate is different, however, for artisans and small handicrafts (20 per cent) and for factory production (100-125 per cent).

vi) gross product originating from all other branches taken together is supposed to increase by 80 per cent. Half this increase (i.e. 40 per cent of the original production volume) is assumed to be proportional with the existing (1955) production volume of these branches. The other half of the increase will be distributed over the regions according to the augmentation of the output (and income) in the three above-mentioned "primary" activities: agriculture, mining and industry.

The latter procedure was adopted because of the fact that many of the branches of industry that were grouped together and considered as one activity are service industries; their production depends largely upon the income of the "primary" sectors.

vii) the values of gross product calculated as is indicated under iii) to vi) give after addition the estimated value of gross (internal) product for the various regions.

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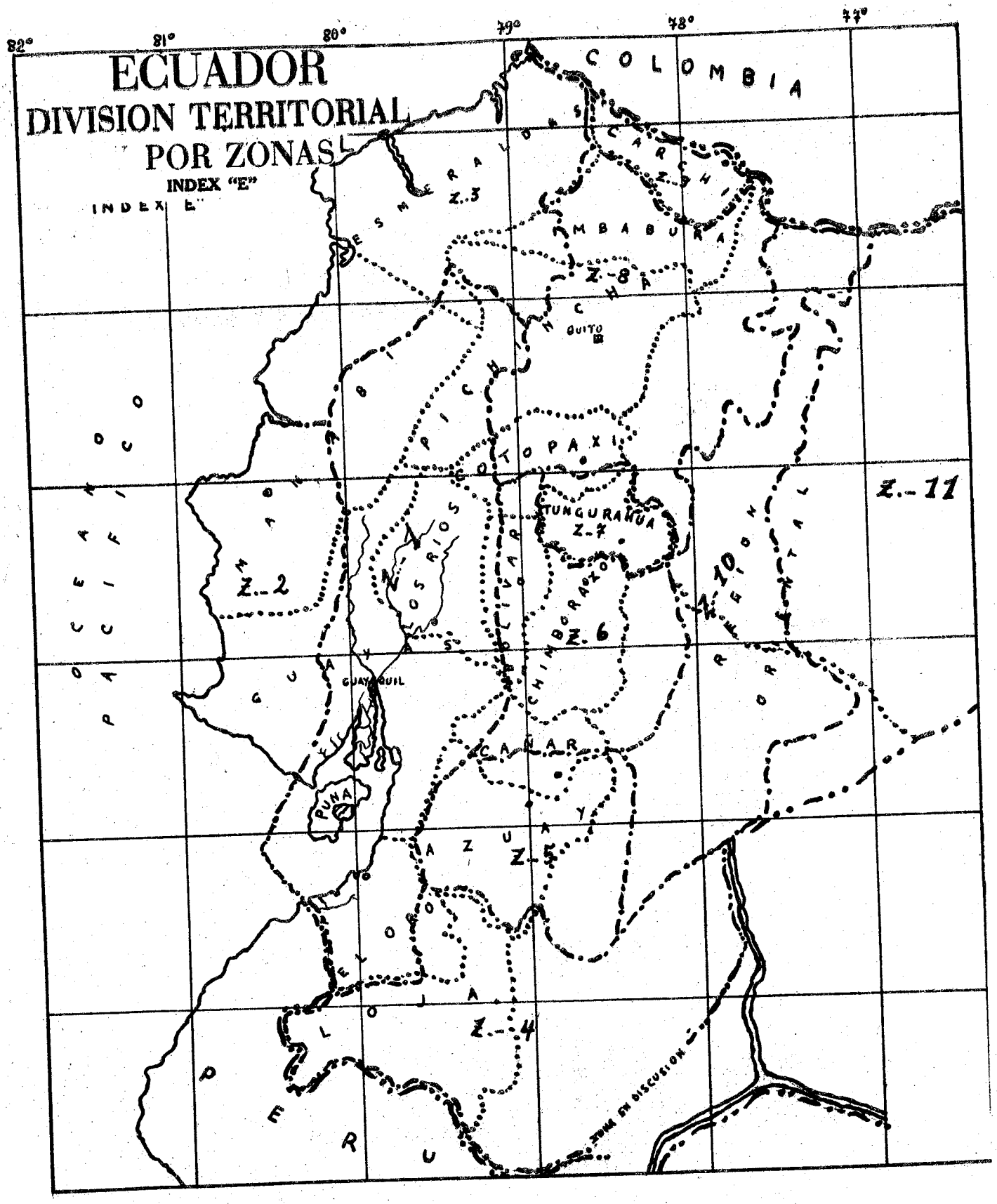
ECUADOR
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POR ZONAS
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INDEX "E"
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Z.-3
IMBABURA
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COTOPAXI
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TUNGURAHUA
Z.-7
Z.-2
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EL ORO
Z.-4
PERU
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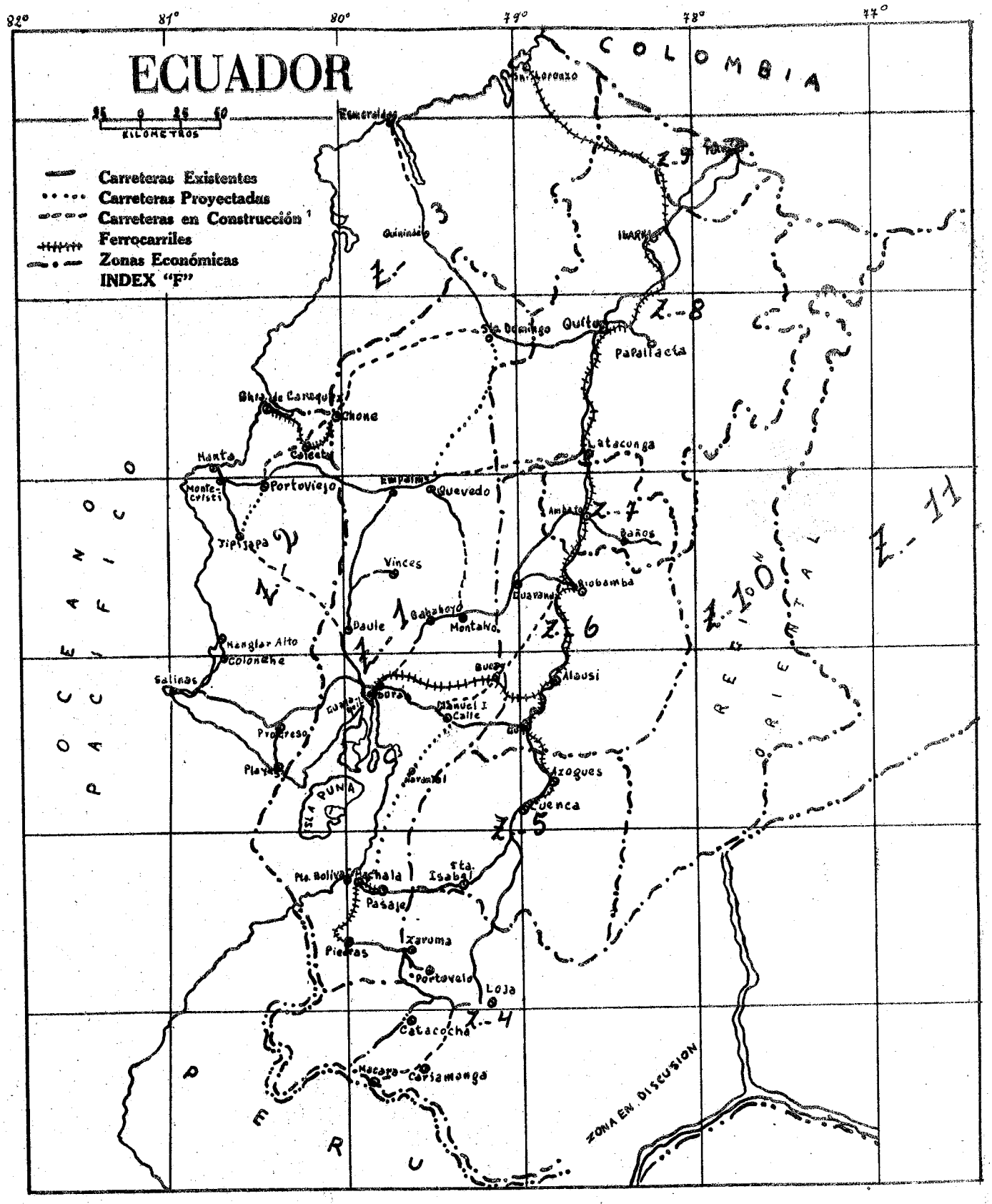
ECUADOR
KILOMETROS
Carreteras Existentes
Carreteras Proyectadas
Carreteras en Construcción
Ferrocarriles
Zonas Económicas
INDEX "F"
COLOMBIA
OCEANO PACIFICO
REGION ORIENTAL
PERU
ZONA EN DISCUSION
Esmeraldas
Quinindé
Sto. Domingo
Quito
Papallacta
Ibarra
Chone
Manta
Portoviejo
Empalme
Quevedo
Latacunga
Ambato
Baños
Tipijapa
Vinces
Riobamba
Guaranda
Babahoyo
Montalvo
Daule
Hanglar Alto
Colonche
Salinas
Alausi
Manuel J. Calle
Progreso
Playas
Azogues
Cuenca
Isla Puna
Pto. Bolivar
Machala
Sta. Isabel
Pasaje
Piedras
Zaruma
Portovelo
Loja
Catacocha
Macara
Cariamanga
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