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EMIGRATION AND RURAL DEVELOPMENT IN TROPICAL AMERICA

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Emigration and rural development in tropical America

The extent and importance of the movement of people from rural areas to other parts of their country and overseas is largely unrecognised in Latin America. In this paper the findings of a number of studies concerned with rural emigration and its associated problems will be brought together to show the extent of rural emigration from and within the highland areas of Tropical America. We shall also demonstrate the complex and varied character of migration and of those who participate in it in comparison with the rather simplistic views of the phenomenon which are widely accepted. The conclusions of technical statistical analysis of migration are largely economic-based and only partly germane to the better understanding of migration.

It will be shown that the extent of migration and the nature of smallholdings in areas of emigration suggest that rural developments in tropical America should go far beyond the improvement of farming.

The context of migration

Although this paper is concerned with the movement of rural residents away from their homes, it is necessary to clarify the theoretical position from which this analysis proceeds. This analysis is based upon the belief that migration is a consequence of a complex set of interacting factors causing individuals (or families) to perceive that their immediate environment is unable to sustain them at an acceptable level of existence. Migration is viewed as a consequence of the nature of society and as a response to the existence of inequalities of social, economic and even political opportunities within a region or nation. These inequalities are both perceived and real and the degree of inequalities between regions changes with time.

Migration is a universal phenomenon affecting large numbers of people at some stage of their existence as a result of the normal pattern of human development and associated activity. Since migration is so widespread, for analytical purposes, it needs to be categorised and since the growth rates of populations in rural and urban areas are very different, an initial categorisation according to the urban or rural nature of the settlement which people inhabit is useful, despite its arbitrary nature. Rural settlements are those where most of the families depend primarily on farming for sustenance and where less than a quarter of families subsist primarily on non-agricultural

occupations. It is important to recognise, however, that many small-scale farmers also engage in wage labour, both locally and in other ecological zones, directly in farming in another zone and in craft work.

The examination of the consequences of any aspect of migration must therefore be firmly rooted in the framework within which migration has taken place. It is not appropriate therefore to identify individual factors causing migration but rather it is necessary to appreciate the interrelated nature of several factors affecting different areas and sorts of people in distinct ways. In the same way, the consequences of migration must be viewed in the context of society as a whole with recognition of those aspects of the organisation and functioning of society that generate migratory movements. It is inappropriate to give undue importance, for example, to purely economic explanations of migration or of agricultural change since personal decisions are not based solely, or sometimes at all, on the search for maximum economic benefit.

Characteristics of migration

Migration is not easy to categorise accurately: it is necessary to identify the length of absence from home that signifies migration and beyond that many students of migration seek to identify degrees of permanency of movement even though such a concept is based largely upon estimates of probability. Migration experience of individuals is frequently cumulative and, although a minority of people in most rural communities have never stayed away from home, many have diverse migratory experience in several locations visited in different journeys away from home.

If we seek to identify general characteristics of migration it is necessary to describe common migration patterns in relation to social and economic space. One can generalise that most people move short distances, but since migrations are frequently identified by a mover crossing a boundary it should be recognised that the positioning of boundaries influences the incidence of migration. Thus, in an area where many small spatial units (parishes, provinces or nations) exist more migrations will be recorded than in a similarly populated area with fewer, larger units. A further characteristic of migration is that human migration between two areal units is directly proportional to

their population size and inversely proportional to the distance between them. It was the recognition of this social gravity concept by J.Q. Stewart in the 1940s, although similar ideas had been used by Ravenstein in the 1880s, that gave birth to the use of gravity models in migration study from which can also be traced the development of entropy-maximising models (Wilson, 1970).

The attempted development of theory through the use of spatial interaction models with relation to migration is an important field of enquiry in social science research but it is useful to consider some of the weaknesses of this approach. A major weakness of the investigations that have been carried out using spatial interaction models is that they are dominated by a concern for the development of models that relate past and present migrations and therefore have an implicit use for identifying what is probably likely to occur in the future. What is lacking is a thorough search for the full range of motivations for migration and for the aspirations of migrants which may help to understand the context within which such human movements take place and the dynamic elements of the migration system. Without an appreciation of migration within a human migration system, any spatial interaction model using only demographic and spatial variables is likely to describe what we do and have done but ignore both the broad context within which migration occurs and the purpose of migration as seen by migrants. It is in this sense that Olsson's (1980, p.197b) criticism that such models tend to explain what people do rather than what people want is logical. A further problem in seeking help from such models is that they are, of necessity, concerned with meso-scale analysis or are micro but probabilistic in essence and thus seeking to identify only at best a most-probable situation. The dynamics of the real world situation within which migration takes place are necessarily not taken into account.

Much of the problem of the inadequacy of migration modelling is derived not so much from flaws in the methods of analysis but rather from the intellectual orientation of those using the statistical techniques who shy away from accounting for a wide range of non-economic conditions that influence people to migrate.

The migration analyses undertaken by economists are understandably based upon the view that "migration is stimulated primarily by rational economic considerations of relative benefits and costs ..." (Todaro,

1976, p.35) and factors that enter into their modelling procedures are concerned with costs of different factors of production although recent work has included expected rather than actual wages and the probability of finding employment. In particular Saint and Goldsmith (1980) have shown that rural emigration in the Brazilian Reconcavo is closely related to the cropping system employed, and to the changes in system of agricultural production. The decision of individuals and families to move is suggested to be more closely linked with changes in rural areas than with regional wage differentials. Where many of the participants are only occasionally or peripherally associated with a cash economy, where migration has been a traditional activity and where complex family strategies exist involving migration such macro-economic models may be of only limited value in understanding migration causes, effects and patterns.

By contrast recent advances in the understanding of migration in Andean Peru by sociologists have hinged on the recognition of the importance of growing diversification in local and regional economic structures and the parallel diversification of family economic strategies whereby farmers farm widely separated areas, sometimes work for other farmers or even in non-agricultural industries. The families have a geographically and socially diverse set of relations with other people and areas and do not necessarily continually replicate the same strategy from one year to the next. This enables farming on very small plots to continue and facilitates rapid switch of people from one source of income to another as demand or satisfaction changes. In a certain sense this is a contemporary version of the pre-Columbian use of multiple ecological zones as a risk minimising economic strategy, which uses and maintains traditional networks while incorporating into them contemporary forms of production (Roberts, 1978). The diversification of family and regional economics is a reaction to the development of industry in peripheral national economies and clearly has important consequences for social formations (Long and Roberts, 1978).

A continual inadequacy of many of the analyses of migration is their emphasis on urban-orientated migration. It can be argued that commercial plantation farming and jungle colonisation offer many of the incentives to migrants that a major urban centre does and both forms of farming offer employment and opportunities for the establishment of family farms that attract many migrants. The problems associated with

rapid population growth in big cities dominate the thinking of people in government and much migration research has been motivated by the supposed problems caused by migrants arriving in metropolitan centres. Thus, and with little statistical foundation, rural emigration is seen as a major contributory factor to urban growth even though much of the city growth is attributable to natural increase and many of the migrants come from other towns and cities rather than the countryside.

This glimpse of other people's views of rural emigration was necessary to emphasise the wide variety of factors that need to be taken into account in any migration analysis whatever the intellectual tradition in which it is rooted. In the following account some attempt will be made to fuse useful elements together into a coherent account of the impact of migration on rural areas.

Rural emigration patterns in highland tropical America

Because this paper attempts to analyse the scale of rural emigration from highland tropical America it is useful to summarise briefly the main features of emigration from these areas, in the light of published research, before reviewing conclusions that can presently be drawn concerning the scale and direction of migration.

Migration from rural areas in Mexico is distinctive in that a destination of importance for both short and long stay migrants is the U.S.A., which attracts migrants from areas as far south as the valley of Mexico. Further south in the densely populated highlands of Chiapas and Oaxaca migration is towards Mexico City, regional centres and agricultural areas of the Pacific and Gulf lowlands. (Exter 1976, Rivière d'Arc 1975, Cornelius 1979, Young 1976, Arizpe 1975). In Central America fragmentary evidence suggests that migration is either towards national, urban and industrial centres, especially in Guatemala and El Salvador, or to the less densely-populated, lowland, agricultural areas, particularly towards the Caribbean (Molina 1975, Durham 1980).

Caribbean migration has long been international of necessity for Caribbean workers were used over a century ago for logging and construction work in Panama and the Caribbean coast of Central America. Migration in the past 50 years is predominantly towards the former neo-colonial or colonial power - Britain, France, Netherlands and the

U.S.A., with the United States and Canada attracting many migrants from the British islands in the Caribbean. From Hispaniola Dominicans have migrated to the U.S.A. and Haitians to the Dominican Republic. Long stay international migration has greater importance in the Caribbean than anywhere else in tropical America, except northern Mexico and it is here as customary as it is in Spain or southern Italy.

Although small streams of international migrants to the U.S.A. do exist from southern tropical America the major currents of migration from rural areas are towards regional capitals and national metropolitan centres, to major industrial growth points such as Ciudad Guayana (Venezuela), or Chimbote (Peru) and to other rural areas where there is a demand for labour and opportunities for the settlement of new land. The differences in migration patterns are largely a reflection of the existence of attractive areas for migrants; thus, in Bolivia, which has few major urban centres, rural migrants travel to colonisation areas in the Oriente and to agricultural areas which have a strong seasonal demand for labour, such as the sugar cane areas of northern Argentina.

The scale of rural emigration over large areas of most of the countries of tropical America is largely unrecognised and no study has so far used comparable data to demonstrate the extent of emigration. If we accept that a static or decreasing population, where demographic data suggest an increase may be expected, is prima facie evidence of large-scale emigration then a map of such areas will show where emigration is widespread. The use of large size administrative areas masks striking local differences and many administrative districts include geographical areas with very different characteristics. A sensitive alternative index of migration may also be the calculation of net migration rates by which areas where emigration exceeds immigration are identified. Different indices of rural emigration are used to identify the areas of most pronounced emigration (Figure 1) in tropical south America. It will immediately be appreciated that very considerable areas in each of the Andean countries are experiencing population loss and that such areas are neither the most isolated nor the least densely populated. Two detailed analyses showed that a declining population was characteristic of large areas of highland Colombia in the intercensal period 1964-73, in cluding 47 per cent of all municipios, excluding the far Llanos (Williams and Griffin, 1978). In Ecuador, over a similar period, population decrease occurred a much smaller proportion of

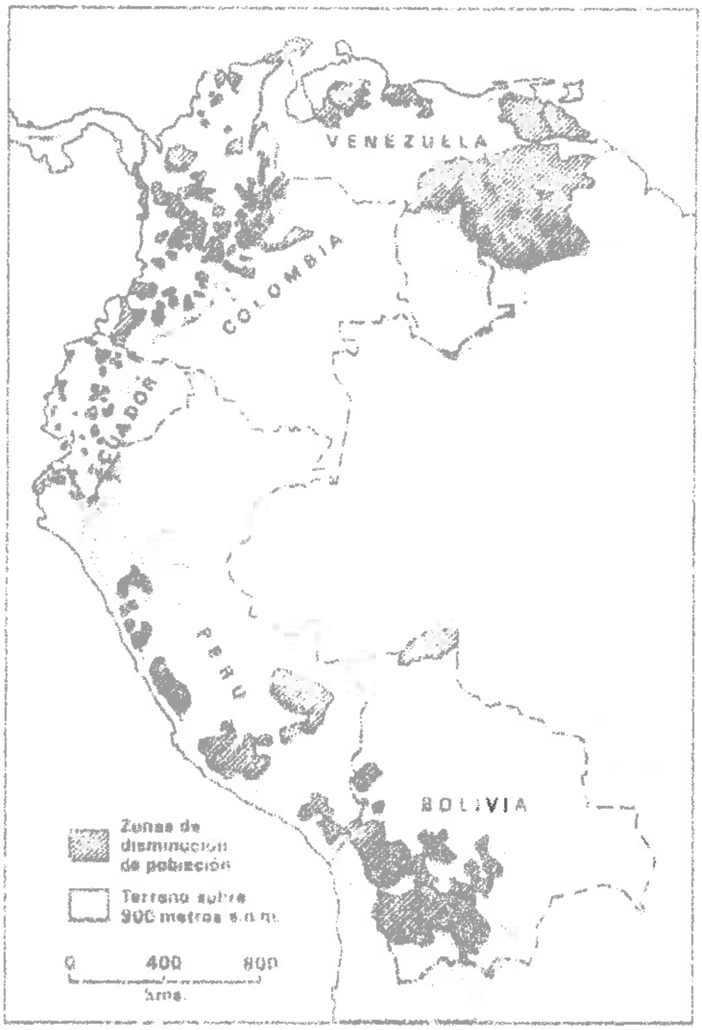

Figure 1

MAJOR AREAS OF RURAL EMIGRATION IN [illegible] SOUTH AMERICA

Notes on Sources

Bolivia : Data from 1976 Census, provisional results. Provinces with an increase in population 1950-76 less than 1 per cent.

Peru : (Cole 1975 fig. [illegible]) based on census data. Provinces where [illegible] population [illegible] 1960-72.

Ecuador : [illegible] 1974. Parishes where a decrease in [illegible] 1962-74.

Colombia : (Williams and Griffin 1978). Municipios where population decreased 1964-73.

Venezuela : (Fox 1979, Chi-Yi Chen 1979). States where rural population decrease forecast 1980-1000 and where negative migration balance 1961-71.

parishes, scattered discontinuously the length of the Ecuadorian Andes, but including some areas, such as Bolívar Province on the western side of the central Andes, where the majority of the parishes have experienced recent population decrease. In areas of predominantly Quechua-speaking population in the central two-thirds of the Ecuadorian Andes the area of population decrease may be unrealistically reduced because Indian migration is predominantly seasonal and census data for such areas is of doubtful accuracy. Those areas of depopulation in Ecuador in Figure 1 are predominantly zones of high population densities with a non-Indian population.

Data from Peru mapped at a province level show several areas of population decline, largely in densely populated Andean areas.

The broad pattern of emigration suggested by the data from Bolivia covering a 26 year intercensal period shows the decline of the less densely populated areas of the central and southern Altiplano where the 1952 Revolution had little impact since estates here were uncommon. However large parts of the eastern Cordillera and the valleys of Tarija show similar decline. The absence of details analyses and the variety of regions where emigration appears important precludes further comment. Patterns of decline in Venezuela mapped at a state level, using both recent net migration data (Suárez and Torrealba, 1980) and projections of rural population to the year 2000 (Fox, 1975) show two distinct areas of decline. On the one hand, four of the six states in the most densely populated areas of the highlands west of Caracas show pronounced decline while four states in the isolated and less densely populated eastern part of the country, largely in lowland areas, also currently have a net loss of population from migration and are projected to have a decreasing rural population in the period 1980-2000. Separate evidence suggests that population decrease is more widespread further west in the Venezuelan Andes where Rojas has shown that 74 per cent of the cabeceras municipales in the three Andean states of Tachira, Trujillo and Mérida were experiencing noteworthy emigration (Rojas 1977). Information from Central America and Mexico is more fragmentary but projections of Mexican population at a state level suggest that only Coahuila, in north-eastern Mexico, will experience a drop in its rural population during the latter half of the century. Data on Costa Rica at a canton level shows a negative net migration in the sparsely populated North Pacific part of the country (Guanacaste Province and part of Alajuela Province) but also some cantons in the densely populated central

highlands are experiencing emigration which is sufficient to cause a decrease in the total population. Data from recent Guatemalan censuses mapped by Thomas show that there was a decrease in the rural population in some 55 municipios in the 1964-73 intercensal period but the distribution of areas with declining populations is discontinuous and a very different pattern of decline emerges from a study of the previous intercensal period (Thomas 1980).

In the Caribbean, where emigration from certain islands has been widespread and of longstanding, data from recent censuses shows the population in rural areas to be decreasing in the Leeward Islands (Antigua, St. Kitts and Anguilla in particular) and in the Netherlands Antilles while in Barbados, Martinique, Trinidad and Tobago rural population increase was less than 1 per cent, also suggesting a strong current of emigration (Cross 1979). It is possible to conclude from this survey that, certainly in Andean tropical America, emigration is a demographic phenomenon that is geographically widespread, particularly in the more densely populated mountainous areas and which seems likely to be associated with a diminishing rural population in the last decade of this century.

Empirical conclusions on rural emigration

It would be presumptive to attempt to do justice to the wide variety of research on migration and even specifically within Latin America but since there is a considerable measure of agreement about the main characteristics of migration some such summary is possible. To set further discussion within a realistic framework we shall summarise the nature of research findings although for the sake of brevity no attempt is made to identify all the specific research papers which support these conclusions.

There is general agreement that the majority of rural migrants are between 20 and 40 years of age which corresponds with similar findings on migration in industrialised countries. Migration commences when an individual has not found a life-partner and is seeking both employment and experience of a wider area than that in which he/she was reared. Mobility continues after marriage and initial childbirth until families find a secure ecological niche. While no major differences appear between the age at which males and females migrate, destination of migrants does vary with sex although not all findings agree. While women migrate from rural areas to urban centres, largely as a result of the lack of

opportunities for rural employment, men migrate both to rural areas and to urban centres and, although in recent years male migration has been largely to urban destinations, this is frequently to a lesser extent than the similar concentration of female migration. In Mexico, migration to the U.S.A. frequently involves whole families but the most single migrants are men.

Findings on migrant destinations are strongly influenced by the urban-oriented nature of the majority of research on rural emigration. Thus, Shaw's study of the rural exodus is, in fact, a study not of the rural exodus but rather of rural-urban migration (Shaw, 1976). Rural emigration is by no means predominantly urban-directed but in the 1970s migrants have been increasingly choosing urban destinations and, within rural areas, migrants from the least isolated areas, from villages or small towns, are much more likely to chose to move to urban centres than those living in scattered homesteads in the countryside. In recent work in selected areas in Ecuador we found that while 77 per cent of the absent children of informants in parish centres lived in urban areas, only 49 per cent of the absent children of informants living more than 30 minutes walk away from the centre lived in urban areas. Analysis of national census data for Ecuador in 1974 for selected provinces shows that people from rural areas who had changed their place of residence had moved in equal proportions to rural and to urban destinations (Table 1). However when all who had changed their place of residence within the same province are excluded - that is between a half and two-thirds of the people who have moved from rural areas - a different pattern emerges showing that about two-thirds of rural migrants from highland provinces moving to other provinces lived in urban areas while less than half of rural migrants from coastal provinces went to urban centres. Rural migrants from the provinces including the two national metropolitan centres however went predominantly to rural areas in other provinces - hardly surprising since the metropolises would attract many of those going to urban areas.

Table 1

Rural Emigration in Ecuador 1974

Province of previous rural residence	Percentage living in another rural area	Urban area
CARCHI (highlands)	56	44
IMBABURA (highlands)	51	49
PICHINCHA (largely highland, inc. Quito)	49	51
ESMERALDAS (lowlands)	57	43
MANABI (lowlands)	59	41
GUAYAS (lowland inc. Guayaquil)	45	55

Table 2

Inter-Provincial Rural Emigration, Ecuador 1974

Province of previous rural residence	Percentage now rural	Percentage now urban
CARCHI (highland)	37	63
IMBABURA (highland)	37	63
PICHINCHA (largely highland)	65	35
ESMERALDAS (lowlands)	52	48
MANABI (lowlands)	52	48
GUAYAS (lowlands inc. Guayaquil)	45	55

Source for both tables : III Censo de Población 1974, Resultados definitivos, volumes for selected provinces.

Findings on the importance of rural emigration are limited by the difficulty of tracing those who are absent and most studies provide illuminating data through asking informants of the whereabouts of siblings or children. Case study information from Peru, Ecuador, Colombia and Mexico suggests that as many as two-thirds of the children of the present generation of rural people live elsewhere and that a greater proportion of the children of those with smallest farms have left. However, studies in a series of villages in Jalisco, Mexico (Rivière, 1975; Exter, 1976) showed that the proportion of children away varied between 18 and 75 per cent. Our own work in Ecuador showed that half the children born in about 1950 in three sample non-indian areas now lived elsewhere. A significant proportion of rural populations have some previous experience of migration and field work in two areas of Colombia, in Oaxaca and in Ecuador all suggest that about 30 per cent of rural adults are returned migrants and that more people in larger, rural villages will be returned migrants than in small villages or in the countryside.

Central to the notion of rural emigration constituting a "brain drain" is the evidence that those who leave rural communities include people who have had more years of schooling than average. Our own evidence from highland Ecuador confirms a variety of other studies and shows that while non-migrants had 2.2 years of schooling, returned migrants had 3.7 years and absent migrants 4.6 years. Further differences in schooling occur between migrants bound for other rural areas and those heading for urban areas with those either living in urban areas or who have previously visited urban centres having more schooling than those migrating to rural areas. There is some evidence to suggest that those with more schooling migrate further than others and that migrants from communities where migration streams have long been established are less educationally superior to non-migrants.

Finally, we must identify who migrates in terms of their social and economic characteristics. In general it is clear that migrants come from all socio-economic strata of the sending community. While the more socio-economically powerful migrate in search of better education for their children and to seek a wider range of economic opportunities, the poor are forced to migrate in order to survive. Conflicting evidence suggests that the poor migrants may not be from the poorest sector of the sending community, for the poorest lack even the means to migrate and this was certainly repeated by many of the poorest families interviewed in our Ecuador study. On the other hand, in a situation of more

widespread and extreme poverty and landlessness in El Salvador, Durham (1979, pp. 94-95) suggests that emigration was far more common among the children of landless families than among those with micro-holdings of 1 hectare (69 per cent of children of the landless had migrated compared with 31 per cent of those whose parents had 1 ha of land). In the Caribbean, where emigration in the small islands is frequently international, poverty presents a more major obstacle to migration and in Montserrat it is small landowners who leave rather than the landless (Philpott 1973). It seems likely that poor families who have some access to land, whether it is as sharecroppers or tenants, may be deterred from any migration other than short-term movement in search of work during the slack season, while those who have no access to land, other than from selling their labour to work for other farmers, have little stable employment and are most likely to migrate.

The migration of Indian peoples is not necessarily the same as that of non-Indian populations although it conforms broadly to many of the features indicated. The most striking feature of migration from some Indian areas of Ecuador and southern Mexico is the tendency to engage in frequent short-term migration, usually in the season when there is least need for work on their own land, and including the farming of rented land in a lowland area as well as labouring in plantations or cities, but maintaining a firm tie with the home community where part of the family lives for most of the year.

The resident population, migration and farming

We have already emphasised that migration involves the absence of many people at any given time and the management of farming in areas of emigration involves making do with scarce labour and the management of the farm by part of the farm family while others are away. Where migration has long been an integral part of family and community life and has taken place during the slack season, the possibility of any changes in farming being introduced which make use of labour at such times is considerably diminished and any increase in the importance of livestock, which naturally demand almost constant attention, is very unlikely. It is also widely agreed that in many circumstances agricultural decisions made in the absence of some household members, particularly males, tend to be conservative, and thus inhibit change. However, in the absence of research specifically examining this question, given

the dominance of research by male investigators and that the opinions of male extension agents concerning the problems of introducing change in areas where many men are frequently away are also gender-biased even such widespread agreement should be treated with caution. Women interviewed in such areas tend to stress the importance of the absence of husbands and elder sons in relation to their labour power rather than to decision making.

The abnormal age structure of communities where emigration is commonplace reduces the labour supply and probably the birth rate but the predominance of young and old means that while aggregate labour supply may not be critically short, for certain specific tasks - such as ploughing and digging - it may be. The reduction in the labour supply available for community work may also be as important as the dislocation of community-wide decision making by the absence of officials.

The highly selective nature of emigration takes from rural communities those with more schooling and greatest willingness to adventure far afield. Many see rural emigration as a "brain drain" whereby rural communities are deprived of their "best" members. Apart from the educational quality, it is difficult to substantiate in what ways migrants constitute the best in the community. Where migrants posses skills or knowledge that cannot be fully used in rural areas then their departure does not constitute a serious loss. Furthermore, if the stock of skills needed in the locality is not seriously depleted so that carpentry, engine repair, or tailoring cannot be carried on then the loss should not be serious. In addition, as emigration increases so does return migration and the quality of the population is improved by the addition of people with broader experience and the possibility of re-evaluating the problems of their community.

Land and capital

Although the impact of emigration is, in part, related to the nature of the migrants it is also important to know who benefits from access to the land of those who have left. In the case of short-term migrants from farm families, the remainder of the family looks after farming, aided by kinsfolk when necessary; similar aid is given by return migrants to the families of absent kinsfolk. Where land is rented or sold by migrants, it is necessary to know who rents or buys the land in order to

determine who benefits from migration. Few studies of rural communities have made more than passing reference to the changing distribution of land resources, therefore comments here will be largely based upon our own work in highland Ecuador (for a fuller account see Preston and Taveras 1980).

The land of migrants is only sold after prolonged absence when all available capital needs to be mobilised - such as when a migrant to the U.S.A. has legal immigrant status and wants to buy property - or when a natural disaster causes migration as in the major Central Andean drought of the late 1960s, when families moved with all available resources to start life elsewhere. In communities in Andean Ecuador only one-third of land sales or purchases by sample families involved emigrants. Data suggested that purchasers of land owned slightly more land than the average for their community but that purchasers of land from migrants owned less land than average. It was certainly not the view of rural people interviewed that the sale of land benefitted only the richest in the community. Almost half of the land rented (usually sharecropped) was owned by migrants and it was those with less than average land who rented from migrants. The process of land rental as a whole tended to equalise rather than unbalance the distribution of agricultural land, more especially in those communities with most unequal land distribution. This very limited evidence does suggest that sale and rental of migrants' land may benefit smaller-scale farmers although not to a very marked degree. The rental of considerable areas of land as a consequence of migration, particularly over several years, is a disincentive to innovation, especially when landowners share none of the costs of inputs bought off the farm - seeds, chemicals, etc. - and, where the tenant receives half of the harvest, costly inputs for which he must pay are not worthwhile. It is for this reason that, in some areas, particularly in the Caribbean, that some farmland has been abandoned for no-one finds it worth working for only half of a meagre harvest. The income from rental to migrants, especially in cities, if very valuable and worth in cash terms much more than the farmer's comparable share. It may indeed be a vital cushion for a city migrant at times of economic uncertainty.

Capital from the sale of land by migrants is exported to wherever the migrants happen to be, but capital is returned to the rural areas by migrants in the form of cash remittances and of goods. Much of this capital is for the sustenance of the family left behind. As many wives

of migrants explained in Ecuador the cash is often only enough to repay the accumulated debts in the village store, and the goods brought by a returning migrant are most commonly clothes and consumption goods, little cash remaining for investment. In our experience in Ecuador the major preference of migrants was to invest migrant earnings in domestic improvements to directly improve the quality of rural life and not farming. Reports from a number of areas, in particular the Caribbean and in Mexico with respect to migrants to the U.S.A., confirm this; investment in land and buildings following consumer goods as a secondary preference. Many migrants who have capital enough to start a business prefer to run a bar or a shop rather than to invest in farming, although investment on livestock, on which there is a quick return and on which cash can easily be raised, is often a preferred type of agricultural investment.

Agricultural change, migration and the natural environment

The process of emigration, particularly of males, and the associated return migration stimulates some changes and inhibits others. Evidence from research relating emigration to either agricultural change or to rural change in general is fragmentary and sometimes contradictory but some generalisations, based in part on our own work in Ecuador, are possible.

Short-term emigration may stimulate agricultural change. For instance, when a migrant is absent for a week at a time and weekends are spent at home, the migrant retains effective control of the farm enterprise, has cash available weekly from his pay that can be used for the farm and he has the regular opportunity to discuss both farming and outside work experience with his family and with other migrants at home and away. Emigration may also stimulate change when the farm is already in part oriented towards the production of a cash crop and where change is directed towards intensification of production rather than the production of a new crop or animal. Evidence from the Huancayo area in Peru strongly suggests that when emigration takes the form of an extension of the family enterprise to new areas - through the sale of local goods in a new area and the supply of other goods from that area for consumption and/or processing in the home area, and involving employment of kinsfolk who have previously migrated or even who subsequently move - then multiple feedbacks to the home area may occur and grow using the new networks established and encourage the growth or initiation of a range of local activities, including farming (see Long and Roberts 1978). Finally, emigration is undoubtedly most capable of

stimulating change for those who already have enough land to support their family or whose land base can be improved, for example, by the provision of irrigation water. Agricultural innovation is strongly correlated with the size of the farm but migrants include many who have more than average-sized holdings.

Communities that have lost a large part of their population are not normally highly innovative although no comparative studies have seriously compared inter-community agricultural change with extent of emigration. Emigration inhibits change where the migrants' land is sharecropped and the benefits of any change introduced by the tenant have to be shared and where the longer-term consequences of improved husbandry accrue solely to the landowner. Where migration leads people to areas where new ideas about farming through direct experience cannot be acquired - as where migration is urbanward - or else inapplicable, where migrants move to a different ecological zone, then agricultural change is less likely to occur. Where migration involves the prolonged absence of the male head of the household innovatory decisions are more difficult because wives don't wish to take full responsibility, male extension agents have little confidence in the likelihood of women making innovations and supportive advice comes largely from elderly, more conservative kinsfolk.

Finally, in many areas of emigration, farm sizes are very small and farming has long been only part of domestic economies, in particular providing food for the family; cash income has been derived primarily from non-agricultural enterprises - trading, weaving, ropemaking, hat weaving etc. Many of the small-scale farmers in areas of minifundia and where emigration is widespread are really part-time farmers and a large proportion of family revenue is derived from wage labour. A recent review and analysis by Deere and Wasserstrom shows that there is range of case study evidence to suggest that 30-60 of the income of some rural families may be derived from off-farm work (Deere and Wasserstrom nd). In these conditions family priorities for the investment of earnings from migration will naturally tend towards investment to generate income from business or manufacturing since farming has seldom been associated with earning much cash. The changes sought by rural smallholders to allow them a better way of life are improvements in material conditions and the models presented to them of the means of buying a motorbike, television or sewing machine are urban-industrial oriented. The cultural goals of tropical Americans are set by city people, city-based government, and

urban-located communications media. The way of life of small-scale, independent farmers is deprecated by rural teachers, by urban-based government officials and, above all, by "successful" migrants.

The direction of environmental change associated with emigration is difficult to determine. On the other hand, certain widely-promoted changes encourage the clearing and farming of steep slopes where such use is inappropriate, or the pollution of water by overapplication of agricultural chemicals and are oriented to short-term profit maximization in contrast to customary preference for risk minimization. On the other hand, there is some evidence that, where emigration is widespread and well-established, especially in the Caribbean in parts of Ecuador and elsewhere in the Andes, the less productive farmland is abandoned and allowed to revert to scrub. This may enable soil deterioration to be checked although it does not perhaps encourage long-term soil improvement if the vegetation cover is limited to grasses and is heavily grazed. In many cases the soil has been so destroyed that regeneration is slow. Environmental change in areas of emigration is a subject urgently in need of further investigation.

Possible future situations

Rural population growth in tropical Latin America seems likely to be slow and the size of the rural areas where an absolute decrease in population occurs is certain to increase. Existing projections of population of Latin America to the year 2000 suggest that during the last fifty years of this century the proportion of Latin America's population living in rural areas - that is, in settlements containing fewer than 20,000 people - will decrease from 60 per cent (in 1950) to only 35 per cent in 2000. The number of hill farmers is likely to decrease for a variety of reasons, in particular because of a change in the system of commercial agriculture whereby such agricultural production will become increasingly the domain of large-scale and corporate-owned farms if present government and international agency policies do not change. The gradual political shift towards the right of major industrial nations make major policy changes in international agencies unlikely. Such production will become concentrated away from hill-lands in, for example, coastal Peru, eastern central Bolivia (and north-western Mexico) although hill-lands suitable for large scale farming - the Sabana de Bogotá, the

northern Riobamba basin in Ecuador, the eastern Altiplano of Peru and the Pampas of Lequezana in southern Bolivia - will remain important areas of commercial farming. The fate of small-scale farming in hill-lands is insecure if such farmers produce goods that attempt to compete with large-scale farmers and the progress of proletarianisation of the rural labour force as a consequence of regular migration to work turns rural people away from farming as a source of future security. Even with improvement in farming systems, the increase in production may not generate a large and varied enough marketable surplus to provide the cash income to enable the quality of life of the farm family to be satisfactory and complementary industrial development, at a village level, is necessary to provide necessary goods and to enable economic diversification to develop. Farming can only be a part of the future strategy for hill farmers.

A conclusion

Migration from rural areas can be better described by mathematical models developed by socially sensitive scientists but this migration is a consequence of the differences that exist and that are increasing between rural and urban areas and people and of the decreasing value placed upon farming and, in particular, small-scale farming, by national societies. The view of migrants as the vivos and the non-migrants as tontos is an urban-centred view that is not easily countered. The quality and content or rural education, extension work and conditions imposed on rural credit by financial institutions not only inhibit the introduction of changes desired by rural people but also discriminate between the rich, poor and the poorest and exacerbate differences between different sectors of the rural population.

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