PEASANT COLONISATION IN MINDANAO, THE PHILIPPINES

by

Peter A. Krinks

This thesis was submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy in the Australian National University

March 1970
Chapter VII

SOME INTERNATIONAL COMPARISONS OF PEASANT COLONISATION MOVEMENTS

It was stated in the Introduction that the great bulk of research into the colonisation of new land has been concerned with completed historical movements. Research into recent or current colonisation has focussed chiefly on organised - usually governmental - settlement schemes. The unguided, or spontaneous, migration and occupation of land by individuals has been noted in many countries but has rarely been the subject of detailed investigation. Important points concerning specific areas have been made more or less in passing, for instance, by writers of regional descriptions, but coverage is very uneven. In this chapter, detailed attention is devoted to a very few areas where a considerable body of information on spontaneous colonisation by peasants has been built up, whether by geographers, economists, sociologists or others. The information on these selected areas is not always directly comparable.

The areas selected for detailed examination are Indonesia, Burma and Costa Rica. Apart from the availability of information, Indonesia and Burma were chosen because, like the Philippines, they are part of southeast Asia, while Costa Rica was selected to provide a comparison as a culturally distinct part of the tropics. In addition, Indonesia and Costa Rica have experienced colonising movements over the same period as the Philippines; although the main Burmese migration into the vacant lands of Lower Burma occurred several decades earlier, it may for this reason be instructive to observe
the conditions that developed from this movement. There are other points of similarity but also many differences between these countries. Thus, both the Philippines and Indonesia are archipelagos and in each case one large island (Mindanao and Sumatra respectively) serves as the major focus of migration. However, most inter-island migrants in Indonesia come from Java, whereas several Philippine islands are sources of migrants. Furthermore, the population of Indonesia is more than three times that of the Philippines, four times that of Burma and 100 times that of Costa Rica. Nevertheless, in each of these countries, either there has been localised population pressure on resources or the prospect of improved agrarian conditions in vacant areas has attracted migrants from long-settled areas. Further similarities and differences will become apparent below.

Indonesia

Traditionally, the colonisation of new land in Indonesia has generally involved small-scale and short-distance movements within islands in response to local pressure of population on resources. In some areas these movements continue. In Java and Madura such movements led to the occupation of all arable land by about the end of the nineteenth century and to the initiation of the process of 'agricultural involution' (Geertz, 1963). Increasing numbers of people were maintained by a constant amount of land through increases of output per hectare while output per person remained stable or even declined. By 1961 the crude population density of Java-Madura had reached 477/square km and the nutritional density was over 1000/square km of cultivated land (Penny, 1969). Some of

---

1 Major sources used in this section were Pelzer (1945), Djoko Santoso and Ali Wardhana (1957), Penny (1964), Wertheim (1964), Heeren (1967) and Kampto (1967).
the increasing labour force migrated to work on Dutch plantations in Sumatra and other islands, but the numbers were too small to affect conditions in Java and in many cases the migration was purely temporary.

More or less simultaneously with the early American efforts at organised colonisation in the Philippines, the Dutch began to establish colonies in southern Sumatra for Javanese settlers. Pelzer (1945) has described the background and early operations of these settlement projects. For a long time, there was little enthusiasm in Java for migration (or transmigration, in the Indonesian terminology) and at times the government resorted to compulsory recruiting. This was in marked contrast to the Philippines, where the establishment of the National Land Settlement Administration in 1935 led to great eagerness for migration under its auspices. In the late 1930s settlers were sent to the colonies in the Lampung area of south Sumatra just before the rice harvest so that they could earn enough money to subsist for the next few months, living with earlier settlers until their own farms were ready. Settlers paid their own travel costs but the government surveyed and cleared land and built roads and irrigation works. Each settler was allotted a farm of one hectare and the aim was to attract migrants by making possible the re-creation of a typical Javanese village. The land allotment was so small as to make inevitable the rapid emergence of the less favourable aspects of Javanese rural life, but in the early stages this was not clear. The largest number of migrants moved in any pre-war year was 53,000 in 1940. This figure represented less than ten percent of the annual natural increase of the population of Java.

After the wartime hiatus, the republican government revived the system of migration. Government support was
expanding to meet all costs of resettlement including the settler's food before making his first harvest. Land allotments were increased to two hectares to facilitate cultivation of cash crops. The government found that the number of volunteers greatly exceeded the capacity of the colonies. Apart from the official scheme, spontaneous migration developed, with Javanese moving with their own resources and squatting in forest reserves or obtaining land from the natives. Simultaneously with the occupation of land by spontaneous migrants, the offspring of many pre-war settlers began to obtain land outside their parents' settlements in which no land remained for distribution. This process was known as 'local migration'.

The number of settlers moved annually by the government in post-war years did not reach pre-war levels. In the peak year of 1959, 46,000 migrants were settled, chiefly in Sumatra, and in the period 1957 to 1962 the average number moved was only 22,000. The number of spontaneous migrants is unknown. In Indonesia, the number of settlers in government schemes is roughly comparable with that in the Philippines, but there has been no comparably massive spontaneous movement in Indonesia. An official estimate is that between 1952 and 1963 there were 189,000 government-sponsored settlers and 65,000 spontaneous settlers (ECAFE, 1964:42). Spontaneous inter-island migration has been less important than migration to cities within Java (Jones, 1968:8-10).

Official settlements were established by formal agreement with the leaders of the native landholding groups (marga) and the agreements applied to specific areas of land. Leaders of groups of spontaneous and local migrants usually obtained forest clearance permits from the marga leaders also but the permission did not specify defined areas and conflict between groups of settlers was not uncommon as each
expanded its clearings. Leaders of groups of spontaneous settlers initially allotted land to their followers, usually in lots of one hectare for each family. Thereafter, individuals were free to add to their holdings if they wished by clearing more forest land, provided that their first lots were not neglected. The additions were rarely contiguous with their original lots. In one area of spontaneous settlement, Kampto (1967;295) found that after three or four years 38 per cent of 251 settlers had a mean farm area of 1.12 ha in a single plot; 42 per cent had a mean area of 2.02 ha in two plots; 15 per cent had a mean of 2.93 ha in three plots and five per cent had a mean area of 3.83 ha in four plots. After the first group of settlers began operations, it was common for relatives and friends from Java to join them. Heeren (1967:210) noted that over 75 per cent of his sample had travelled directly from Java rather than in stages as among the Philippine settlers.

People who wished to expand their holdings commonly let their established clearings to newcomers on a yearly contract. The tenant would have to plant the area to coffee or pepper but was allowed to harvest food crops free of rent until the land was fully planted. The owner sometimes gave the departing tenant part of the first cash crop harvest or even part of the land. Many settlers did not try to add to their initial clearings or to plant cash crops, remaining content with rice, soybeans and minor food crops. The spontaneous and local migrants initially received no assistance or services from the government and there was virtually no attempt to create wet rice fields (sawah) in the forests of south Sumatra by the settlers' own efforts (Kampto, 1967:297). In fact, even in the official projects the rate of immigration outstripped the provision of irrigation. Unaccustomed to sedentary dry farming, both official and spontaneous settlers had poor rice yields and
their expansion into nearby forests was essentially in order to augment their food supply from new clearings. Deforestation was rapid and invasion by grasses common. In some areas, land deterioration was so advanced by the mid-1950s that settlers were using cassava as their staple, as in the poorest parts of Java (Wertheim, 1964:189; Timmer, 1961:442-5).

All studies of Javanese resettlement have noted the small sizes of farms in the new areas, even where more land has been available. This phenomenon is generally attributed to a continuation of Javanese cultural ideals and 'subsistence-mindedness' (Penny, 1964, 1969; Heeren, 1967:175). In a survey among Javanese settlers in north Sumatra, Penny found that the mean farm area was 1.5 ha. Rice accounted for 77 per cent of farm receipts despite the fact that the settlers had formerly been labourers on tobacco estates and knew how to grow tobacco as well as realising how profitable it was. Although settlers in this area have often been able to achieve a marketable surplus from their wet rice fields, their holdings are too small to permit this to continue as farm population grows. Penny (1969:261-2) points out with reference to the settlements in general that landlords, money-lenders and landless labourers have already begun to appear, and he cites Kampto's finding that in an area settled for 30 years 73 per cent of the landholders owned less than 0.7 ha and 32 per cent of family heads were landless. Every study cited has revealed (implicitly or explicitly) that Javanese colonists have commenced their new operations on farms of inadequate size and their adjustment to the new physical environment has been insufficient. In attempting to re-create their home conditions the Javanese have (as Sumatrans claim) merely exported their poverty, and have more or less ensured the need for further migration from the
colonisation areas themselves within a generation. These areas do not have the fertility to support the 'static expansion' that has taken place in Java. Colonisation has not only failed to make a significant contribution to Indonesia's agricultural economy; it has also failed to alleviate the problems of rural Java.

Burma

Lower Burma comprises mainly the Irrawaddy delta and the lowlands around the Sittang and Salween estuaries, together with the littoral strips north and south of these rivers. The coastal strips were annexed by the British in 1826, the delta in 1852. At this time, the lowlands were only sparsely populated, partly as a consequence of warfare and partly as a result of the Burmese kings' policies of compelling resettlement of the population in Upper (or inland) Burma. The British administration encouraged the re-occupation of the lowlands by tax concessions and by making land available under various forms of occupancy, and the area under rice in Lower Burma grew from 27,000 ha in 1830 to 400,000 ha in 1855. The opening of the Suez Canal in 1869 made European markets for rice more accessible and the consequent rise in returns from rice stimulated more rapid development of the lowlands. Between 1855 and 1900 the area planted to rice in Lower Burma increased from 0.4 million hectares to 2.7 million hectares, growing at a mean annual rate of over four percent (Cheng, 1968:6,25). Over the same period, the population of Lower Burma grew from 1.5 million to almost 5.5 million, and the density of population from under 17/square km to 42/square km. By 1886-7, rice accounted for

---

The major sources used in this section were Furnivall (1957); Tun Wai (1961); Cheng (1968) and Richter (1969).
85 per cent of the value of all Burmese exports. Both the rice area and the population continued to increase after 1900, although at a slower pace, but as the economy diversified the share of rice fell to about 50 per cent by 1930 (Cheng, 1968:206fn, 221; Richter, 1969:145-6). It is clear from these figures that the colonisation of Lower Burma had an immense impact on the national economy.

One aim of the British administration in encouraging colonisation was to create a body of peasant proprietors. Furnivall (1957:51-7) has described the forms of occupance recognised by the British. The term 'squatter' was applied to people who were allowed to settle freely on vacant land subject to payment of annual revenue. After twelve successive years and subject to continued payments of revenue the occupant could treat the land as private property and dispose of it at will. Although squatters were expected to cultivate the land on pain of ejection during the first 12 years, the law was not enforceable. Hence it was easy for speculators to acquire large holdings with the annual revenue tax as the only cost and hold the land undeveloped until land prices rose.

The administration introduced what was known as the patta system, by which grants of between six and 20 hectares were made to approved cultivators who were exempted from revenue payment for several years, during which mortgage of the land was forbidden. Although the aim was to control colonisation through processing of patta applications, the occupation of land proceeded ahead of cadastral surveys and conflicting or overlapping claims were common. In the event of conflicts the local revenue officials became the effective deciding agents and decisions were commonly influenced by bribery, placing genuine cultivators at a

---

1 Although such 'squatters' were never formally approved, the use of the term here differs from that in other countries such as the Philippines and Costa Rica where squatting was clearly illegal.
disadvantage compared with speculating civil servants. Many of the cultivators who obtained patta lands lacked capital for development. Some borrowed the necessary funds on mortgage - infringing the conditions of the patta grant - and then found themselves unable to repay and thus lost their land. These tendencies were noted as early as the 1880s, but by the time the patta system was abandoned in 1910, much land had already passed into the hands of wealthy landlords and money-lenders (Cheng, 1968:148, 151).

Other systems of land release included leasing, which was quickly abandoned as ineffective, and grants of large areas for people possessing large capital resources for development. Speculators and non-agriculturists used such grants also to acquire large holdings at low cost. These holdings were often let in small plots to tenants, but most were eventually resumed, still uncultivated, by the government.

As colonisation proceeded during the twentieth century, the accumulation of land into fewer hands continued. In 1901, agriculturists owned 82 per cent of the land in Lower Burma; in 1920 they still owned about 75 per cent but by 1936 the proportion had fallen to 53 per cent, largely through the foreclosure of mortgages (Tun Wai, 1961:103-4, 117; Cheng, 1968:144). Although immigrant Indian money-lenders held mortgages over large areas of land, when they foreclosed much of the land was sold to rice millers aiming to ensure supplies for their mills, entrepreneurs wanting land to use as security to obtain loans for their enterprises, and people who simply wanted a secure form of investment. Burmese money-lenders tended to retain land that they foreclosed, though they did not usually cultivate it personally. By 1936, 39 per cent of the land in Lower Burma was controlled by absentee owners.
By 1931, owner-cultivators formed only 37 per cent of the agricultural work force while landless labourers accounted for 40 per cent and tenants for 23 per cent. (Richter 1969:149). During the period from 1870 to 1930, Furnivall (1957:77) estimated that the level of agricultural wages had fallen by 20 per cent. It had become difficult for labourers to save enough to buy draught cattle in order to rent and cultivate land. It was also difficult for tenants to acquire their own land, so that permanent classes of tenants and labourers developed, in contrast to the position at the beginning of the colonisation phase when migrants served as labourers or tenants only long enough to locate and claim land for themselves. By 1935, 57 per cent of the occupied land in Lower Burma was operated by tenants (Cheng, 1968:157). Other aspects of deteriorating conditions were rising levels of rents and a great instability of tenure which resulted in poor methods of cultivation and, according to Furnivall (op. cit.:70), a lower income for tenants than for labourers.

The result of the uncontrolled systems of release of vacant land was that land in Lower Burma became controlled not by a strong class of peasant proprietors but by wealthy, and often absentee, landlords. The majority of the cultivators were tenants and labourers; small-scale owner-operators were in a decreasing minority. While it is not possible to assess changes in levels of living of the people who colonised the lowlands, nor to compare directly incomes of lowland farmers with those in Upper Burma, tenuous evidence suggests that the advantage to be gained by migration from Upper Burma had become dubious by

These figures are for all Burma and understate the position in Lower Burma. By 1939, 59 per cent of farm land in Lower Burma was under tenancy, compared with less than one-third in Upper Burma (ibid.).
the 1920s and, according to Cheng (1968:234), by the 1930s the farmers in Lower Burma were definitely worse off than those in Upper Burma.

The main disadvantages to farmers in Upper Burma were the small size of holdings and the unreliability of rainfall which could lead to crop failures and famine. The proportion of tenants and labourers among agriculturists was comparatively small; tenants were commonly farming the land of kinsmen and there was no up-bidding of rents such as took place in Lower Burma. Although farms tended to be minutely subdivided, stability of tenure was high and cultivators, whether owners or tenants, were prepared to use more intensive methods than those used in Lower Burma. While the cultivator in Lower Burma had to protect his land against floods, he rarely suffered complete crop failures. On the other hand, the insecurity of most cultivators in the lowland areas led to poor cultivation methods (Furnivall, 1957:67, 80-1). Furnivall also related increasing social disturbance, expressed in rural crimes, to the insecurity and deteriorating conditions of tenants and labourers in the colonisation areas.

Costa Rica

Although the population of Costa Rica in the late nineteenth century was less than 200,000, with a crude density of only nine people/square km, over 80 per cent of the people were concentrated in the rich agricultural area of the Valle Central lying between volcanic mountain ranges. Most of the Pacific and Caribbean lowlands were very sparsely settled. When coffee became a major crop in the mid-nineteenth century, much of the land in the Valle Central came into the hands of wealthy people. While many

---

1 The major sources for this section are Sandner 1959, 1962, 1964 and 1967; Parsons, 1963.
people became tenants or labourers, others migrated to the edges of the valley. The peripheral lands were occupied by 1880 and migrants began moving out of the valley across the mountains towards the lowlands. In 1892, the Valle Central contained 80 per cent of the national population; by 1927 its share had fallen to 75 per cent and by 1959 to only 54 per cent, when the country's population had reached 1.1 million. As these figures imply, the main movement occurred during the second quarter of this century.

During the period 1927 to 1959, the population of the Valle Central doubled and that of some of the lowland areas tripled. The crude population density\(^1\) in the Valle Central rose to 142/square km by 1959 while densities in the main area of colonisation, the Pacific lowlands, reached 12-13/square km. While these densities appear low in comparison with those in the other countries examined in this chapter, the associated agrarian conditions have nevertheless led to great mobility. Thus in 1963 only 66 per cent of the population were resident in their native districts. Even in the areas of colonisation, between 8 and 13 per cent of the people have migrated at least once within the region and 13 to 17 per cent have emigrated from these regions (Sandner, 1967:15).

Many laws relevant to the occupation of public lands have been passed since the nineteenth century, but many have remained inoperative while some have contained conflicting provisions. Thus in the 1885 Fiscal Code, one Article specified 50 ha and another Article 500 ha as the limit freely obtainable from public lands. In 1939, arrangements for 10 to 15 year leases were codified, as well as a law

---

\(^1\) The sources used do not give enough information to calculate regional nutritional densities. In 1963 Costa Rica had a crude density of 50 people/square km and a nutritional density of 87 people/square km of agricultural land, that is, land in crops or pasture (Sandner, 1967:24).
granting up to 30 ha to any adult not possessing fixed property. In 1941 people who had squatted on public lands for ten years were allowed to claim up to 100 ha for cropping or 300 ha for stockrearing. Shortly afterwards, squatters on private lands were allowed to retain the occupied areas while the owners were compensated with grants from public lands. Sandner (1962:157-8) cites a comment 'Leyes hay bastantes, pero faltan hombres para hacerlas cumplir' ('There are enough laws but not enough men to ensure they are fulfilled'). For the most part, it proved impossible to control the course of colonisation according to the law, particularly as colonisation did not advance in a continuous front but rather in many directions and in patches often separated from roads and administrative centres by forested hills.

The major reason for migration in Costa Rica has been to obtain land, especially land freely available from the public domain. Although legal processes for obtaining land existed, they were commonly ignored and migrants cleared or abandoned land without regard for regulations. Sandner (1964:5) suggests that colonists could be classed into those aiming to improve their long-term economic conditions as titled property owners, and those who wanted land primarily for subsistence and were unconcerned with the formal tenure condition of the land they occupied. The majority of both classes were people with little or no capital. Although detailed processes of colonisation differed from area to area, broad similarities may be discerned.

As a rule, migrants moved in stages. Lacking capital and generally being remote from markets, they grew subsistence crops (rice, maize, beans or yucca) in temporary, rotated clearings. When yields fell, they might extend their clearings or, if the surrounding land had been occupied, they might move to distant areas being newly opened. At first, their clearings were often freely
abandoned but as the first clearers were followed by increasing numbers of migrants, the pioneers could sell their clearings to newly arrived colonists. By this stage, some links with markets could be established and the remaining pioneers and the secondary colonists could adopt a more intensive and usually partly commercial agriculture on holdings between 20 ha and 100 ha. As the potentialities of new areas became apparent, wealthier migrants in a third stage would buy larger holdings for ranches and some would set up as store owners and cash-crop buyers. The smaller owners could obtain capital as well as produce from these stores on credit, but many mortgages were foreclosed and the borrowers became tenants or labourers on the growing estates of the wealthy. Often, once the estates were fully developed as ranches or plantations, the tenants would be forced to migrate again (Sandner, 1962:54-6). Thus to some extent the social and agrarian conditions of the source area, the Valle Central, were re-created in the colonisation areas.

Meanwhile, pioneers were repeating the initial stages of the process in successively more remote areas. In this way, vast areas of land were cleared of forest, though not necessarily permanently settled, and the forest was succeeded by wild grasses or scrub on impoverished and eroded soils. It was mainly where roads provided links with markets that settlements became permanent, but these were also the areas that experienced secondary and tertiary stages by which land was concentrated into fewer hands. The third stage, however, has not yet applied to many colonisation areas and there are comparatively few tenants who do not also own some land. In many of the older areas of colonisation, subdivision upon inheritance has led to a high degree of fragmentation and of part-ownership as small owners rent each other's lots in order to achieve
some rationalisation (Sandner, 1964:77). In the colonisation areas 30 to 40 per cent of farms are less than 7 ha and between 20 and 25 per cent less than 3 ha (Sandner, 1962: Table 14). In the newer areas, squatting is the normal form of occupation. In 1963, out of a national total of 65,000 farms, 17,000 were squatted, with a mean size of 14.5 ha.

The majority of colonists are still basically subsistence farmers who sell occasional surpluses. Sandner (1967:15) considers that most of even the stable colonists do not achieve a level of living above the minimum of existence and in fact often have a lower level than before migrating. The acquisition of a large farm in remote areas raises a migrant's social prestige but may not benefit him economically.

According to Sandner (1967:25), both governments and the people of Costa Rica have viewed their land resources as inexhaustible and have looked to these to correct regional imbalances between population and availability of land for ownership. Ownership in itself is a major social value and appears to have taken precedence over more economic aspects of agriculture, leading to the wasteful features of colonisation during the past century. Further development of this kind will become impossible within a few decades as the remaining forest is destroyed. Between 1955 and 1963, during which period the population increased by 38 per cent, the area of secondary vegetation rose by 108 per cent while the productive area increased by only 33 per cent (Sandner, 1967:24). Since the second World War, the average yields of maize, one of the major staples, appear to have fallen from about 1.3 metric tons to 1.0 or 1.1 metric tons per hectare (FAO 1968:56), which is perhaps
related to soil impoverishment in the colonisation areas.¹

The process of spontaneous colonisation in Costa Rica has in effect been an unguided and informal agrarian reform but it has brought neither permanent relief to the densely settled areas nor improved living conditions to most colonists.

Comparison of colonisation experiences

The above outlines of spontaneous colonisation processes and results in three countries suggest several close parallels to and some differences from those that operated in Mawab and in Mindanao at large. In all cases, migrants from relatively densely settled areas were attracted by vacant lands more or less freely available, though in the case of Burma before 1886 there was some degree of a 'push' factor. The institutional arrangements for disposing of vacant land varied considerably. None of the three countries described above has had a coherent system operating for as long as the system of disposal formulated in the Philippine Public Land Act of 1903 (and its later amendments). However, both Costa Rica and Burma at various times allowed the claiming of land in manners resembling the Philippine homestead provision (for instance, the Burmese patta), or the leasing and sales provisions and the granting of free patents (for instance, the recognition of squatters' rights). In Indonesia, on the other hand, arrangements outside government-supported colonies were basically ad hoc, reflecting the controlling importance of customary law (adat) in many areas.

¹ The lack of regional data prevents assessment of the relative contributions of long settled and newly settled areas to this decline in yields.
Whatever the formal legal structures for the occupation of land, they were widely disregarded. A major reason for this was that the administrative services in all the countries considered were insufficiently staffed and procedures were too slow to cope with the speed of occupation. Delays in surveys and delineation of claimed lands were responsible for many disputes, and pioneers often found themselves cheated of their land by later claimants. A related issue was the scope for evasion of regulations and, at worst, for favouritism and bribery in allocating land, which occurred in both Burma and the Philippines.

**Processes of migration and settlement**

In all the countries examined, colonisation began slowly but developed rapidly as information about the availability of land and about economic opportunities spread to the source areas. While the role of governments was important in overcoming inertia during the earliest stages, later chain migration became the rule, with information passing along links of relatives.

In most areas the migrants moved in stages, as propounded in Ravenstein's fifth law of migration (Thomlinson, 1965:263), but the stages for land-seeking migrants were nearly always rural areas, so that Ravenstein's sixth law, that stages are generally rural area-small town-small city-large city, is inapplicable. Movement in stages did not necessarily imply mobility towards continually better economic opportunities; often it was related to continually deteriorating conditions in the colonisation areas. In Costa Rica and to a lesser extent the Philippines and Indonesia, land resources have so far been adequate to allow dissatisfied pioneers to move repeatedly in search of new land, whereas in Burma mobility
has been due more to the movement of dissatisfied or evicted tenants and labourers within areas already settled.

Except in some areas where government settlement schemes have been established, migrants have rarely been able to obtain detailed information about the quality of land and other resources of particular areas. Hence, directions of colonisation have sometimes ignored what later proves to be productive land, instead following the routes of pioneers and of public or private roads. The use of logging roads as access routes by settlers has often opened up areas unsuited to agriculture or remote from the markets that would give settlers an outlet for their produce (cf. Budowski, 1966). In areas where major highways were built to stimulate development, results have sometimes been disappointing for lack of associated feeder roads.

Colonists have usually moved well ahead of survey teams and land has often been cropped and abandoned or sold before it has been registered as occupied and before requirements of occupancy could be enforced. Native landholders in the Philippines have sometimes suffered at the hands of immigrants. Although pioneers often made small payments to native rightholders, the native valuation of forest land was unsophisticated in terms of the encroaching economic order. Native groups who have become minorities in their home areas have lost most of their land and many have moved to remote refuge areas. Only in the Moslem areas have native occupants resisted domination by immigrants. In the other three countries, most pioneers have been able to obtain land freely. In Indonesia, autochthonous groups have retained much of their land. In Costa Rica, ethnic divisions between colonists and earlier occupants of some lowland areas have been insignificant, and in Burma the pre-existing population was not thick on the ground. To some extent in Indonesia, but much more in the other three
countries, the mobility of settlers moving in stages led to high rates of turnover of land rights. Land values have usually risen swiftly, resulting partly from high values placed on land ownership, partly from speculation and only partly from the effects of capital improvements made on the land by successive occupants.

Results of colonisation processes

Land tenure and farm size. In all the countries considered, as in most tropical countries with colonisation schemes, the aim of legislation and government programmes has been to create peasant proprietors through land settlement. There have been differences of approach, motivations, and standards. For instance, in the Philippines, Costa Rica and Burma allowance was made for the creation of large capitalist farm enterprises whereas in Indonesia government schemes allocated two hectare farms and spontaneous settlers in many cases have been content with farms little, if any, larger than this. In Indonesia the explicit aim of the government was to enable the re-creation of the traditional Javanese village (without its unfavourable aspects) and migrants seem to have accepted a ceiling on their ambitions, at least as expressed in land holdings. In the other countries migrants seemed keener to obtain much larger holdings than they were accustomed to. Nevertheless, as land became less readily available, peasants in densely settled areas were not deterred from migrating by the prospect of obtaining only a few hectares. Nor were they deterred by changes in the prospects of immediate land ownership. In the Philippines in recent years many people have migrated to take up pre-arranged tenancies in the settlement areas. Although they have usually hoped to find their own land later, many are becoming resigned to tenancy in the colonisation areas. The same has been true in Costa Rica and Burma.
The emergence of tenancy (and of squatting) in areas expected to be occupied by peasant owners has been almost a general rule as colonisation proceeds. Many tenants are late migrants who are unwilling to move to the more remote areas or who need to obtain land quickly to support their families. Such tenants commonly rent land at least temporarily from kinsmen or friends. Many tenants, however, are migrants who at first obtained plots of land but who for one reason or another had to relinquish their rights to such land. In the areas studied, perhaps the commonest reason for losing land has been the foreclosure of mortgages, while land has also been abandoned after deterioration through poor cultivation techniques, inadequate fallows, soil erosion or invasion of wild grasses. The settler's returns from such land may prove poorer than those obtainable by renting better land.

**Capital.** An important factor in both the acquisition of land and the use made of it has been capital. In the great majority of cases, spontaneous colonists have possessed very little capital, whether in the form of money or equipment. While the initial acquisition of land has often required little expense, land development has been hindered since, in the absence of capital, it has depended upon labour supply and this is commonly scarce in areas of colonisation. In cases where a commercial product can be produced rapidly as land development proceeds, capital formation by peasant colonists can be rapid, as happened during the period of abaca cultivation in the Philippines or with rice in Burma. Where colonists cannot produce quickly-maturing crops or where marketing problems are a major constraint, land development and commercialisation are delayed and colonists are essentially subsistence farmers. There are also many instances where settlers aim at little more than subsistence from the start. In such cases, the
later provision of roads and transport to markets may ensure commercial development by the original settlers, as in parts of Mindanao and Sumatra. An alternative, and perhaps accompanying, process most common in Costa Rica, has been for more prosperous people to arrive in order to take advantage of the new developments. With greater capital resources they can buy land, at the same time encouraging land prices to rise. Those who operate as buyers of settlers' produce and as sources of credit may obtain additional land by foreclosing on mortgages. The former occupants may move to new areas or remain as tenants or labourers on the newly-developing estates. The richer settlers may develop a capital-intensive agriculture or they may, as in parts of Costa Rica and the Philippines, merely hold land as a speculative investment, perhaps operating cattle ranches at a low level of capital intensity. From a national point of view, one of the main advantages of spontaneous peasant colonisation over other forms is that it tends to economise on scarce capital by substituting labour. However, unless conditions make possible rapid capital formation by the colonists, it seems that they are prone in due course to lose the fruits of their labour.

Land use. The quality of land use by peasant colonists has been a major issue in studies concerned variously with agriculture, forestry and economic development in the tropics.1 The opening of new land offers opportunities to improve agricultural techniques and avoid

---

1 The literature on tropical land use is enormous and even that literature referring in whole or part to land settlement by peasants is too large for full citation. Works that have been particularly useful in writing this chapter are Budowski (1966), Pelzer (1945), Farmer (1957), Watters (1967) and Zelinsky (1967).
problems that may be almost insoluble in the migrant source areas. The size of farms has been an important factor in land use, since colonists in other than wet rice-growing areas have often adopted a form of bush or forest fallowing. Even for subsistence farmers several hectares would be necessary to allow adequate restoration of the soil while other parts of the holding were in crops. If the holding is to produce crops for sale as well as for food, the total area needs to be larger. The accounts above have shown that many settlers have areas that are too small for adequate rotation of fallows. In the absence of other means of restoring fertility, the quality of the land and its returns declines. Declining fertility of dry-cropped lowlands is a serious enough problem, but the effect of colonisation on upland areas is usually more drastic. With reference to colonisation movements in the circum-Caribbean area, Zelinsky (1967) concluded that

> When, as so often happens, the pioneering, haphazard and without official guidance, is the work of the ecologically ignorant in fragile, unfamiliar environments, the results can be catastrophic.

Budowski (1966:196) stated that when population pressure leads to the occupation of sloping lands

> ...it takes only a few years, usually less than five, to produce a great deterioration or complete loss of the topsoil when it comes to the marginal lands not favoured by natural fertility or inherent favourable soil structure.

While Budowski's time scale would be unduly brief in less marginal areas, the basic finding agrees with those of most other workers. Sandner's comments on the Costa Rican situation were reported above (p. 249-50). Watters (1967:34) said of Venezuelan colonisation zones 'In the absence of state action, it is indeed ironic that this process of destruction must run its course as a necessary prelude to the rehabilitation of the area'. Pelzer (1968:276),
referring to the uplands of northern Mindanao, said that it
will be only

...a matter of three or four generations before
large parts of Mindanao will be a replica of
Cebu.... Where will the Cebuanos go after they
have destroyed the forest soils on the hill and
mountain sides of Mindanao?

While Watters related destructive land use to insecure tenure
of squatted land, it seems from field observations in
Mindanao and from the literature on Indonesia and Costa
Rica that in these areas at least it is more a case of
ecological ignorance, since untitled occupants do not
necessarily feel their positions to be insecure. Although
Blaut (1959) has raised a dissenting voice, the consensus
of students of tropical land use is that permanent
cropping of uplands is only feasible with terrace systems
and the investment required for these is beyond the
capacity of most migrant peasants.

On the other hand, the skilful use of tree crops, with
or without annual crops, may invalidate some of the
strictures on peasant land use. Such land use is practised
for instance in the settlement projects of the Malaysian
Federal Land Development Authority (FLDA) (Ho, 1965).
However, the FLDA projects have required enormous
investments and close supervision of settlers by trained
staff. Such facilities are nowhere available to spontaneous
colonists and rarely even to government-supported colonists
other than those in Malaysia.

As regards the establishment of wet rice cultivation,
in Indonesia some migrants in favourable areas have
created wet rice fields but many have felt that the

---

1 In the colonisation areas on the lower Andean slopes in
Venezuela 51 per cent of all farms were occupied by
squatters and 21 per cent by share- or fixed-rent tenants
(Watters, 1967:29).
construction of irrigation systems is beyond their capacity and have waited for government assistance, which has been very slow. Settlers in Burma and the Philippines have been more prepared to establish small-scale irrigation systems (communal or private) or to level and dyke fields for rainfed wet rice. The same has occurred among spontaneous migrants in Malaysia (Fisk, 1961) and Thailand (Chapman, 1967), and it is clear that with adequate water supplies from streams or rainfall and with land that does not require major terracing, peasant colonists can establish extensive rice fields without great difficulty or expense.

The effect of migration and resettlement on the cultivation techniques of peasants is not clear and depends on many other factors. It was noted above that in Burma techniques in the colonisation areas were poorer, though yields higher, than in the migrant source areas. In Indonesia it appears that techniques of Javanese colonists remain constant in so far as wet rice cultivation is concerned, but as a result of the different environment many colonists have been unable to continue their intensive techniques of wet rice cultivation and have turned to extensive and less productive forms of dry-cropping. Sandner's findings in Costa Rica are similar and suggest a deterioration in techniques. In the Philippines the Mawab data suggest that without marked stimuli from outside, settlers continue their traditional practices as far as possible. In most of the countries examined, it is the wealthier peasants that seem most inclined to innovate. This underlines the role of capital in financing innovations. At the same time, capital provides a measure of security in case of failure. Poorer peasants cannot afford to risk failure. However, in none of the cases examined has there appeared any great desire by the mass of colonists or even by the wealthier ones to take full advantage of the
opportunities of new conditions. In part, this reflects lack of information about opportunities, since spontaneous colonisation has usually preceded scientific investigation of resources of an area. However, it may also be related to a tendency, among early colonists at least, to be content with the higher productivity of newly opened land compared with the areas they have left. Watters (1967: 49-50) suggests that migrants might be prepared to adopt productivity-increasing innovations that would be comparatively ineffective in their depleted home environments and he proposed that governmental agencies should provide technical assistance from the early stages of settlement, before migrants were habituated to using their old techniques in the new setting. No such effort was made in any of the countries examined and in each case the scale and diffuseness of uncontrolled colonisation movements were beyond the capacity of the government service agencies.

Levels of living. The economic conditions resulting from settlement are very variable. In Mawab, it was seen that the earliest settlers have prospered but for later settlers there may be little if any improvement in the long term over conditions in their home provinces. While the same tendency appears to a certain degree in the other countries, in Burma and Costa Rica there has also been a pronounced tendency for pioneers to lose their land, for either ecological or economic reasons, and for later migrants with capital\(^1\) to become more prosperous. In effect, pioneer peasant colonists have served as ground-breakers for wealthier people who have arrived when areas have indicated their potential for development. In Indonesia, the larger landholdings obtained by migration

\(^1\) In Burma these were commonly not farmers but merchants or millers.
have yielded an improved level of living to settlers, but in view of the likelihood of rapid fragmentation of the new holdings through inheritance, and of the poorer soils compared with those in Java, the improvement is likely to be temporary. The same conclusion may be reached for those settlers in the Philippines and Costa Rica who have taken up small holdings in areas of precarious ecological balance that is likely to be catastrophically disturbed by repeated cultivation.

Judging from the examples studied and from reports dealing with other areas, peasant colonisation has successfully opened up and made productive millions of hectares of land at comparatively little capital cost. While colonists in areas of good soils, good communications and suitable crops have been able to raise their levels of living far above those they experienced in their home areas, it seems that possibly a majority have been unable to achieve this. The causes are varied, including amongst others lack of communication with markets, difficulties in producing profitable crops, declining productivity with continued cropping by unsuitable techniques and the development of unfavourable tenure conditions when the best lands are pre-empted by pioneers or bought up by a comparatively few wealthy people.

Contributions to the national economy. Many authorities have referred to the belief of governments and of peoples that their countries possess vast resources of land that may be developed in order both to relieve, if not solve, the agrarian problems of densely settled regions and to make significant contributions to the national economy. It is clear that the latter aim has sometimes been realised. Thus in Burma and the Philippines production of commercial

---

1 For instance, Budowski (1966), Sandner (1967:25), Watters (1967) and Zelinsky (1967).
crops by settlers made major contributions to the nations' export earnings. More recently in the Philippines, Mindanao and the Cagayan valley have produced surplus rice and corn that relieve deficits in other regions. In Indonesia and in Costa Rica the output of colonisation areas has been far less significant to the national economies. The prevalence of subsistence farming by colonists has been widely reported in all areas. As for effects on the source areas, it seems that, apart from the possibly temporary relief of food deficits, emigration and resettlement have never been on a scale sufficient to provide more than a 'breathing-space' during which basic problems might be (but rarely were) tackled. Zelinsky (1967:17) has likened the effect of colonisation to

...the multiplication of yeast cells in a nutrient medium; an impressive gain in the bulk of living protoplasm, but no semblance of a stronger, more elaborate organism.

With few exceptions, spontaneous colonisation has been assessed as at the most only partly successful in terms of the common aims of relieving problems of densely settled areas and adding significantly to national wealth. It is worth examining briefly the contributions that have been made in these directions by organised colonisation schemes, whether by governments or private bodies. This examination will be through description and reference to relevant studies rather than through an attempt to quantify costs and benefits.

Organised land settlement

In the first place, it may be noted that settlers in organised schemes commonly experience many of the problems of spontaneous settlers, particularly where the organisation is loose and supervision slight. For instance, in some settlement schemes in the Philippines, the administration
has simply accepted as settlers people already resident on the land or people who arrived at the project as applicants with few or no credentials. Lack of supervisory and service personnel has allowed the development of tenancy even on five hectare blocks in settlement projects, and overlapping land allocations also occur (field observations; Land Authority, 1966; 1967:78-84; Bahrein, 1969). Problems of crops to be grown, techniques to be used and the availability of transport and marketing facilities may also resemble those of spontaneous colonists.

A more meaningful comparison to be made as regards organised settlement is with settlers in highly organised projects such as those of the Gezira scheme and the Malaysian FLDA. There is no doubt that such projects have developed sophisticated and productive forms of land use and that settlers have experienced levels of living well above those in neighbouring rural areas. However, these achievements may not exceed those of successful spontaneous colonists such as the pioneers in Mawab and, more importantly, they have been extremely expensive (Mellor 1966:188). For instance, Ho (1965:3) cited the cost of FLDA operations as over $US 3,000 per settler family (exclusive of costs incurred by other government agencies). Farmer (1957:319) estimated the cost of establishing colonists in Ceylonese projects at about the same level. Linares (1967:94,97) reported costs between $US 1,200 and $US 4,200 per family in organised projects in Bolivia and Frost (1964) found costs of $US 1,000 per family in Guatemalan projects. These and other students have pointed out that governments cannot afford to create enough schemes on this scale to cope with even existing overcrowding in poor areas, not to speak of future population increases. As Fisk (1961), Linares (1967) and others have pointed out, capital-intensive projects that benefit a small minority of
peasants are essentially a luxury in underdeveloped countries. Apart from their high financial cost, they tend to exhibit paternalism, rigidity in productive systems and a danger of errors in predictions of market conditions for the planned crops.

The question has often been raised whether the capital used in such projects could have been used more effectively in other directions – particularly in creating employment opportunities through industrialisation, in intensive attempts at thorough agrarian reform in densely settled areas, or in providing only basic services in sparsely settled areas and leaving further development to spontaneous settlers. No single answer could be valid for all the tropical countries faced with regional imbalance of population and rural poverty, nor need a country commit itself to a single means of colonisation or of creation of employment opportunities. However, the literature suggests that very few organised settlement schemes have been as carefully planned or administered as those of the FLDA and much capital has been invested to achieve results little or no different from those of spontaneous colonists.

**Conclusion**

Spontaneous colonisation in the tropics has been responsible in total for the resettlement of many more people than organised schemes. At its best it has swiftly opened productive land through the use of labour where capital is at a premium, and has contributed to increased production of foodstuffs and raw materials whether for domestic or export consumption. It has, also at its best, 1

---

1 For instance, Bahrein (1969:57) found that in a representative Philippine scheme there were seven service officers for 1,164 settlers, whereas in an FLDA project there were 24 officers for 655 settlers.
provided greatly improved living standards for many peasants as well as checking the deterioration of densely settled areas. However, this has often been achieved at the cost of much waste of resources. This has included human resources lost through sickness incurred by pioneering far from health services, or through disappointment of settlers and abandonment of land. It has also included waste of physical resources, for instance through the destruction of valuable timber and degradation of soil. At its worst, spontaneous colonisation has produced no permanent gain for the countries concerned and has merely transferred agrarian problems to new areas. It is rarely, if ever, possible to strike a balance such as may be partly feasible through cost-benefit analysis of organised, documented official projects, but in the concluding chapter the results of spontaneous colonisation in Mawab municipality will be summarised and discussed in the light of the economic and demographic situation in the Philippines.
Chapter VIII

SUMMARY AND CONCLUSIONS

Summary of fieldwork findings

The investigations among settlers in Mawab revealed that the majority had been dissatisfied with agrarian conditions in their home provinces and had migrated to Mindanao to obtain farms of their own. The process of chain-migration ensured that the composition of the population of Mawab was in large part determined by the provincial origins of the early settlers. However, migration in stages was also the rule and migration chains drew in people from areas of Mindanao where settlers stayed before reaching Mawab.

The phenomenon of chain-migration had a further consequence, in leading to a tendency for kinsmen to occupy neighbouring plots of land and so for extensive areas to be occupied by paisanos. However, clustering of houses was rare; until some time after 1945 the only settlement with even a slight degree of nucleation was Mawab poblacion. It was shown in Chapter II that the main factor influencing nucleation was the construction of roads, with the location of schools having a secondary effect since their associated social gatherings encouraged the construction of stores and of rice and corn mills nearby. These developments have been unplanned and in all barrios the majority of settlers still live on their farms.

The methods by which settlers acquired land differed primarily according to the period in which they arrived in Mawab. In the early stages, homesteading was the rule.
The land selected was invariably in the plain and settlers with lowlying land that proved too wet for abaca preferred to retain this for rice cultivation rather than claim land on the slopes around the plain. Even before the plain was fully occupied, some early settlers were prepared to buy comparatively small lots close to paisanos rather than move into isolated areas of forest. Land became available for purchase when pioneers returned home after sickness or becoming discontented with their new conditions. Many people occupied land before it had been released from the forest zone, and homesteading regulations were commonly evaded although legal procedures for obtaining title were followed. Due to delays in surveying land and in processing of applications, the actual granting of title patents was very slow.

Apart from the large hacienda in central Mawab, most of the plain was claimed by settlers as homesteads even though some of the homesteaders were in fact the second or third occupants. The most accessible parts of the hills were occupied in the same way, but the most remote parts have not been released from the forest zone and the occupants are still squatters. The squatters do not regard themselves as temporary occupants. Rather, they hope that their land will be released for homesteading and in the meantime they have resisted harassment by forest guards of the Bureau of Forestry and timber concessionaires. The hope of release of their land has led the squatters to plant permanent trees and to pay real estate tax as evidence of their claims.

In the early years owners frequently let part of their forested land in order to develop it more rapidly, and many settlers spent a brief period in Mawab as tenants before becoming landowners. More or less simultaneously with the occupation of the hills, abaca was increasingly affected by
mosaic and abaca fields were converted to crops such as rice and corn that were more labour-intensive. Many migrants arriving after 1958 became tenants on rice or corn land. As this process has continued the mean size of rented farms has declined, and after paying rent few tenants with less than three hectares can save enough to buy land as was common in earlier years. Many settlers are now resigned to permanent tenancy, partly consoled by the fact that their yields and incomes are higher than in their home areas. Those few tenants and labourers who manage to buy small plots of land rarely obtain more than three hectares, since most land available for purchase is bought by wealthy pioneers, merchants or non-agriculturists from other towns. Several pioneers have now accumulated land well above the limit set for homesteads and the range of sizes of farms has increased, with small farms becoming much more common. It was noted that the renting-out of land in small lots is a natural response to the continued use of traditional technology, since owners cannot cultivate more than about 5 ha with the constraint of family labour supply. In these circumstances the beginning of a possible trend towards mechanisation by richer landowners has serious implications for the welfare of tenants as well as for others who rely on casual labouring for an important part of their income.

The earliest settlers were able not only to obtain large holdings of fertile land in the centre of the plain but also to benefit from the high prices for abaca at certain periods. This double advantage made capital formation easy for the pioneers once their crops were mature. Their surplus funds were primarily invested in large houses, in abaca stripping machinery and in high school and college education for their children. In contrast, more recent settlers in the uplands have no such reliable commercial crop as abaca and find capital formation more difficult, even where they occupy over five or six hectares within half a kilometre of the national highway.
An additional advantage for many of the earliest settlers was the location of their land in the irrigable central part of the plain. When it became necessary to replace abaca they were able to adopt the most profitable alternative crop, rice, whereas settlers in areas unsuited to rice cultivation had to choose other crops such as corn, coconuts or coffee to replace their abaca. While none of these crops required the investment of labour necessary for rice growing, none was as profitable as rice. Moreover, agricultural extension work has been almost entirely confined to rice growers and only the biggest growers of coconuts, coffee or corn have asked for agricultural advice. Hence, productivity-increasing innovations have been adopted by rice growers more than by other farmers. This contrasts with the situation in most of southeast Asia where rice cultivation is usually one of the last crop enterprises to be modernised. Even so, in Mawab rice is still grown by most farmers essentially in the same way as in their home provinces. With good water supply and comparatively fresh soils, yields are higher than the national average, but are still low by international standards. The same is true of corn: yields are high by Philippine standards but it appears that this is largely, if not wholly, due to the fertility of recently cleared soils, and some people have already reported declining yields.

From the agricultural viewpoint it is regrettable that little effort was made among the settlers to encourage the adoption of improved cultivation practices from the earliest stages, in order to avoid the probable repetition of

---

1 This situation may now be changing. As was noted in the Introduction (p.xxx above), Philippine rice yields have begun to improve significantly following the widespread adoption of new crop varieties and new production practices (see also p.273 below).
processes that have caused the agrarian problems of the densely settled parts of the Philippines. In the early stages of colonisation, many of the institutional problems of the source areas, such as tenancy, small farms and indebtedness were absent. They had barely begun to appear in Mawab when the conversion from abaca took place and are still not as severe as in the source areas. Hence there have been fewer obstacles to the adoption of innovations in Mawab. Nevertheless, except for a narrow range of predominantly labour-saving or crop-protective measures, innovations have not been widely adopted. The leading innovators have been Ilocanos, mostly pioneers but including some more recent settlers with farms of less than five hectares. The high productivity and incomes of these later Ilocanos in particular have indicated what can be achieved by small-scale farmers using improved methods, but the demonstration effect has not yet spread widely among small-scale settlers from other cultural groups.

**Implications for the future**

Mellor (1966:31) has pointed out that 'expanding the land area at constant productivity and incomes is not economic development in the usual sense - it is only a holding action in the face of a growing population.' Although many settlers have improved their personal levels of living since migrating, the mean income level in Mawab is within the normal range for Philippines farmers. As the population of Mawab grows from both natural increase and continued immigration, the labour force will grow and, in the absence of technological change, the productivity of labour is likely to fall. Simultaneously, farm sizes are likely to decline, chiefly through subdivision among heirs, and income levels will be lowered. Lower incomes are likely not only to reduce farmers' willingness to take risks but also to reduce the amount available for investment in innovations that would increase productivity.
The extent to which this process might occur among the wealthier pioneers is uncertain, because they have been able to afford the schooling for several, if not all, of their offspring that enables them to obtain non-farm employment. The pioneers' farms may therefore not be divided into separate operating units in the next generation. It is in fact more likely that such farms would grow in size. This would happen if economic pressures caused smaller farmers, with few reserves, to sell their land. With continually rising land prices, it would be increasingly difficult for any but wealthy farmers or non-agriculturists to buy land. If at the same time the wealthier farmers mechanised their farms or extended plantings of tree crops that require less labour than field crops, the displaced settlers would need to find either farms in other areas or non-farm employment.

The prospect of finding new farms is almost certain to become very faint as the remaining vacant land in Mindanao becomes occupied and, probably, experiences the same processes that are suggested for Mawab. The prospects for non-agricultural employment are not clear but there is at present no indication of any marked growth of non-farm activities in the Mawab area. If anything, the opposite is more likely as forested areas are logged-over and partly occupied by squatters. As logging operations settle down to a sustained yield basis there will be less demand for casual labour than in recent years when timber was cut as rapidly as possible. While commercial establishments may increase in number, there is no likelihood of these offering major avenues of employment.

If events follow the course outlined above it is likely that Mawab (and similar areas) will in turn become areas of out-migration like the Misamis provinces in northern Mindanao, but the migrants are likely to move to developing urban areas, where there is greater likelihood
of industrial employment, rather than to rural areas. Such urban areas include, in Mindanao, Davao City and Iligan. Whether these centres can provide sufficient opportunities to accommodate the increasingly rapid growth in the labour force remains to be seen and a detailed examination is beyond the scope of this thesis. It is, however, of interest that a recent sample survey in Davao City (Bayanihang Manggagawa, 1967) revealed an unemployment rate of 9 per cent, which was higher than the rate of 3.2 per cent for the whole province in 1960, while the survey also reported an underemployment rate of 24 per cent.

This summary and forecast of colonisation in Mawab has emphasised unfavourable aspects. These accord with the descriptions of colonisation in other countries given in the previous chapter. However, there are aspects of development in Mawab that may form the basis, albeit frail, of an alternative, more encouraging projection. The major element is the comparatively high level of adoption of innovations by small and medium-scale Ilocano farmers, that is, those farming no more than ten hectares. They all have incomes above the mean, whether measured absolutely or in terms of income per hectare or per consumption unit. These incomes have been used to buy both agricultural inputs and consumption goods, including manufactured products such as construction materials, furniture and packaged foods. So far, the demonstration effect has extended mainly among the wealthier farmers with large holdings, as the risks of innovation have deterred most of the small farmers. However, there are reasons for believing that innovations may become more widely adopted. Firstly, the Ilocanos have demonstrated to their neighbours that small-scale farmers can, with suitable work and consumption patterns, afford productivity-increasing inputs from their own resources. Secondly, up till now most landlords have done no more than encourage tenants to use high-yielding seeds, pesticides and fertilisers, and the tenants have not been prepared to pay
the whole cost of such inputs while sharing the incremental
returns with the landlords. If landlords now become
sufficiently impressed by demonstration effects, they may
begin to assist their tenants to meet the costs of
technological improvements. Whether or not land reform
subsequently affected Mawab, both tenants and landlords
would, other things being equal, become more prosperous as
agricultural productivity increased. A third factor is
that Philippine domestic production of agro-chemicals has
only expanded significantly in the last few years.

Previously, demand was greatly in excess of supply and
often only expensive complete fertilisers were available.¹

The greater availability and lower price of such chemicals
should lead to increasing use, particularly in view of the
increasing availability of fertiliser-responsive crop
varieties. This relates to a fourth factor, the increased
attention paid by government to agricultural research and,
to a lesser degree, extension. The main achievements to
date have been in rice, with varieties such as C-18, BP1-76-1,
IR-5 and the internationally known IR-8 ('miracle rice')
being widely used since 1967-8. Although hybrid corn
varieties for Philippine conditions have been available for
some years, they have been expensive and little effort has
been made to popularise them. In 1967, a new synthetic corn
variety became available and was dubbed 'wonder corn' by
reason of its productivity. No extension effort has yet
been made for the new corn comparable to that for
distribution of IR-8, but such an effort is likely
following the success of the rice programme. The government
is also proposing to establish a coconut research institute,
though results from such an institute would naturally not be
available in the short term.

¹ Nitrogen in complete fertilisers is three times as costly
to the farmer as nitrogen in ammonium sulphate or urea
(Barker, 1966:275).
A dynamic technology, then, is becoming increasingly available to Philippine farmers. The connections between the adoption of continual technological change and economic growth were summarised in the Introduction (p.xxi) and it is perhaps at this point that one may best assess, in general terms, the contribution to Philippine agricultural and economic growth of colonisation as typified by its results in Mawab.

**Land settlement and Philippine economic development**

Without detailed studies, it is impossible to assess the precise impact of large-scale emigration on the source areas of migrants. It is plain (see p.10 above) that in the main migration period 1948-60 population in the areas of emigration grew at rates far below the national average. Assuming a marginal productivity of labour above zero, emigration would have caused a relative slowing in the growth of output, but a more important effect would probably have been through the absence of migrants as consumers (cf Widjojo, 1961:336). Indirectly, emigration, while not actually reducing pressure on resources, nevertheless retarded the rate of growth in pressure and provided a breathing-space. For instance, land subdivision through inheritance was slowed when some heirs migrated and some owners were able to make innovations that would have been uneconomic if they had inherited smaller plots. Another important effect was that newly opened areas produced surplus foodgrains that helped relieve the deficits of areas like the eastern Visayan islands. It should be noted that this surplus was due more to the initially higher productivity of the land than to technological improvements in the colonisation areas.
It is in agricultural production that the colonisation areas have had their greatest impact on the economy. Recent studies\(^1\) have shown that the major part of increased agricultural production in the Philippines during the twentieth century up until 1961-2 has been due to increased agricultural area rather than increasing yields. Although the Mawab data show rice and corn yields well above the national average, the studies cited indicate that in aggregate the improvement of corn yields on newly opened lands was offset by declining yields in the eastern Visayan islands, whereas improved yields of rice in the established irrigated areas were offset by lower yields in newly opened areas that were mostly not irrigated. At the national level, there was no significant increase in total agricultural output per capita and Hooley and Ruttan (1969: 219) suggest that agricultural stagnation offset the comparatively rapid growth of the non-agricultural sector, reducing the nation's rate of output growth by half between 1902 and 1961. Paauw and Tryon (1966:37) state that 'It is difficult to escape the conclusion that industrial growth has been primarily fuelled by intermediate goods from foreign sources largely financed by agricultural export earnings'. Up to 1955, a significant part of these earnings was derived from abaca produced in Davao. Copra from Davao and other colonisation areas was also important\(^2\) as a direct export or intermediate input to the coconut oil industry. Without the contribution of the colonisation areas, export expansion would have been slower or even non-existent and the non-agricultural sector would have been unable to

---


2 Nyberg (1966:7) reported that coconut yields in Mindanao were about 20 per cent higher than the national average.
import necessary capital goods and intermediate or raw materials. Moreover, without the contribution of foodstuffs from newly opened land, a larger proportion of a smaller absolute quantity of foreign exchange would have been necessary for food imports. In addition, food prices might well have been higher, perhaps leading to a need for higher wages for workers, so that funds for industrial expansion would have been further depleted. In these terms, the role of colonisation and development of idle land was of crucial importance to Philippine economic growth during the period of extremely rapid population growth after the second World War.

Nevertheless, in the areas that were newly developing and free of some of the restraints of densely settled areas, the opportunity for initiating a dynamic technology at an early stage was missed. Conditions for the adoption of such technology are still rather more favourable than in the densely settled areas but if recent trends continue this advantage may soon be lost. In recent years references to the 'closing of the land frontier' in Mindanao have become common. This does not mean that immigration will necessarily cease but that population densities are likely to begin increasing rapidly. There are no remaining 'safety-valves' in the Philippines comparable to Mindanao in 1945. The main potentially productive agricultural lands are in Palawan and Mindoro and their absorptive capacity is not high. Failing a very rapid rate of improvement in agricultural productivity, the only outlet for increasing rural population will be migration to urban areas. In the Philippines such migration has hitherto been on a smaller scale than in many developing countries. If recent agricultural innovations do not produce a lasting effect but merely raise agricultural output to a slightly higher level of
Plate 1. Centre of Mawab poblacion, facing west. Structures on left mainly comprise sari-sari stores, refreshment stalls, a tailor's shop and a pharmacy. The larger structures on the right are homes of wealthier farmers and tradesmen.
Plate 2. Barrio road.

Plate 3. Settlers from barrio Sawangan fording the Hijo River.
Plate 4. Harrowing a rice field in Nuevo Ilocos.

Plate 5. A squatter's corn fields, in varying stages of growth. Barrio Malinawon.
Plate 6. Lowlands rice fields in a small basin in the hills in eastern Nuevo Iloco. Logged-over forest occupies the hills.

Plate 7. The edge of the same basin, showing rice fields on level ground and corn and coconuts on the slopes.
Plate 8. Removing partly-dried copra from halved coconuts, barrio Nueva Visayas.

Plate 10. Gully filled with debris from logging and subsequent clearing by squatters, barrio Concepcion.

Plate 11. Squatters' houses on hill-top sites in logged-over forest, sitio Kantabo, Tuburan.
Appendix Figure 1  Population pyramids for Davao province and the Philippines.
Appendix Table 1


<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total population (millions)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypothesis A</td>
<td>27.1</td>
<td>37.7</td>
<td>53.4</td>
<td>76.7</td>
<td>111.1</td>
</tr>
<tr>
<td>Hypothesis B</td>
<td>27.1</td>
<td>37.1</td>
<td>49.0</td>
<td>61.0</td>
<td>72.7</td>
</tr>
<tr>
<td>Hypothesis C</td>
<td>27.1</td>
<td>37.4</td>
<td>51.4</td>
<td>69.8</td>
<td>91.7</td>
</tr>
<tr>
<td><strong>Per cent aged 15-64</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>51.2</td>
<td>51.3</td>
<td>50.8</td>
<td>50.3</td>
<td>49.9</td>
</tr>
<tr>
<td>B</td>
<td>51.2</td>
<td>52.0</td>
<td>55.3</td>
<td>60.5</td>
<td>64.4</td>
</tr>
<tr>
<td>C</td>
<td>51.2</td>
<td>51.6</td>
<td>52.7</td>
<td>54.0</td>
<td>56.5</td>
</tr>
<tr>
<td><strong>Growth rate per 1000 people</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>32.3</td>
<td>35.2</td>
<td>36.3</td>
<td>37.4</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>32.3</td>
<td>25.9</td>
<td>20.7</td>
<td>17.1</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>32.3</td>
<td>31.7</td>
<td>29.7</td>
<td>26.5</td>
<td></td>
</tr>
</tbody>
</table>

Hypothesis A: Constant fertility as in 1960-5.
Hypothesis B: Progressive decline in fertility beginning in 1965 and accelerating 1975-95.
Hypothesis C: Age-specific fertility rates after 1965 are arithmetic means of rates in Hypotheses A and B, therefore gross reproduction ratios are midway between these two hypotheses.

Appendix Table 3

**Philippine exports**

<table>
<thead>
<tr>
<th>Year</th>
<th>Total (US$ million; FOB)</th>
<th>Percentage formed by</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Abaca</td>
</tr>
<tr>
<td>1950</td>
<td>331.0</td>
<td>13</td>
</tr>
<tr>
<td>1955</td>
<td>400.6</td>
<td>7</td>
</tr>
<tr>
<td>1960</td>
<td>560.4</td>
<td>8</td>
</tr>
<tr>
<td>1965</td>
<td>768.5</td>
<td>3</td>
</tr>
<tr>
<td>1966</td>
<td>828.2</td>
<td>2</td>
</tr>
<tr>
<td>1967</td>
<td>821.5</td>
<td>2</td>
</tr>
<tr>
<td>1968</td>
<td>848.3</td>
<td>1</td>
</tr>
</tbody>
</table>

Appendix Table 4

Philippine imports

a) Mean annual imports of rough rice, wheat and wheat flour.

<table>
<thead>
<tr>
<th>Year</th>
<th>Rough rice (thousand metric tons)</th>
<th>Wheat and wheat flour (metric tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1911-20</td>
<td>233.2</td>
<td>not available</td>
</tr>
<tr>
<td>1921-30</td>
<td>101.2</td>
<td>(1926-29) 71.9</td>
</tr>
<tr>
<td>1931-40</td>
<td>52.8</td>
<td>(1933-40) 83.8</td>
</tr>
<tr>
<td>1946-55</td>
<td>118.8</td>
<td>182.9</td>
</tr>
<tr>
<td>1956-65</td>
<td>193.2</td>
<td>274.9</td>
</tr>
<tr>
<td>1966</td>
<td>104.9</td>
<td>487.9</td>
</tr>
<tr>
<td>1967</td>
<td>290.4</td>
<td>541.5</td>
</tr>
</tbody>
</table>


b) The share of cereals in Philippine imports.

<table>
<thead>
<tr>
<th>Year</th>
<th>Total value of imports (US$million; FOB)</th>
<th>Cereals and cereal preparations as percentage of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>341.9</td>
<td>not available</td>
</tr>
<tr>
<td>1955</td>
<td>547.7</td>
<td>6.8</td>
</tr>
<tr>
<td>1960</td>
<td>603.8</td>
<td>4.1</td>
</tr>
<tr>
<td>1965</td>
<td>808.1</td>
<td>11.7</td>
</tr>
<tr>
<td>1966</td>
<td>852.8</td>
<td>6.2</td>
</tr>
<tr>
<td>1967</td>
<td>1,062.2</td>
<td>4.7</td>
</tr>
<tr>
<td>1968</td>
<td>1,150.2</td>
<td>2.4</td>
</tr>
</tbody>
</table>

BIBLIOGRAPHY

Adams, Richard N. 1965 Migraciones internas en Guatemala; expansión agraria de los indígenas Kekchies hacia El Peten. Estudios Centroamericanos No.1, Austin, Texas.


Bureau of Forestry 1951 Memorandum, April 21, 1951, by Forester in Davao City. Bureau of Forestry files, Manila.

____ 1952 Letter dated August 26, 1952, from Acting Chief, Division of Forest Management to Forest Coordinator. Bureau of Forestry files, Manila.


Bureau of Plant Industry 1964 Annual report of the Plant Pest and Disease Control, FY ending June 30 1964. Davao City: Regional Office.

____ 1967 Facts, agricultural statistics, development plan...and other pieces of information of the province of Bohol. Tagbilaran, Bohol: Bureau of Plant Industry (mimeo).


Carino, L.V. 1966 The politics and administration of the pork barrel. Local Government Studies No.3. Manila: University of the Philippines, School of Public Administration.


Census Office of the Philippine Islands 1921 Census of the Philippine Islands 1918. Manila: Census Office.


Chicote, Fermin 1967 Report to Governor of the Land Authority, Quezon City, dated April 18, 1967.


Dayyo, Silverio C. 1957 'The rural credit situation and credit experiences of farmers in Bangauen, Ilocos Sur.' 
*Philippine Agriculturist*, 7, 4: 486-97.

Depositario, Willie G. 1965 'Why kaingineros insist on destroying our forest reserves.' 
*University of the Philippines Research Digest*, 5, 3: 1-3.


Djoko Santoso and Ali Wardhana 1957 'Some aspects of spontaneous transmigration in Indonesia.' 


---


Eidt, Robert C. 1967. 'Modern colonization as a facet of land development in Colombia, South America.' 
*Yearbook, Association of Pacific Coast Geographers*, 29: 21-42.

Erasmus, Charles 1956. 'Culture structure and process: the occurrence and disappearance of reciprocal farm labor.' 
*Southwestern Journal of Anthropology*, 12, 4: 444-69.


Fisk, E.K. 1961. 'The mobility of rural labour and the settlement of new land in underdeveloped countries.' 
*Journal of Farm Economics*, LXIII, 4 Pt 1: 761-78.


Galang, F.C. 1950 'A survey of the labor required in the production of some important crops in different provinces of the Philippines.' Philippine Journal of Agriculture, 15,6:297-309.


Gervacio, Emmanuel T. 1959 'The livelihood of corn farmers.' Silliman Journal, VI,4:283-311.

Gill, Tom 1959 Forestry proposals for the Philippines. A report to the International Cooperation Administration and the National Economic Council (mimeo).


Gutierrez, José S. 1959 'Rice production and consumption requirements.' Philippine Agricultural situation, V,1:13-35.

____ 1960 'Corn production and consumption requirements.' Philippine Agricultural situation, V,2:10-25.


Hester, Evett D. and Pablo Mabbun 1924 'Some economic and social aspects of Philippine rice tenancies.' Philippine Agriculturist, XII, 9:367-444.


Lava, Horacio 1938 *Levels of living in the Ilocos region.* Study No.1. Prepared for the Philippine Council, Institute of Pacific Relations, Manila: University of the Philippines, College of Business Administration.


Linares, Adolfo 1967 'Land settlement in Bolivia.' *Development Digest, V,1:89-100.*


Mears, Leon and Randolph Barker 1966 'Effects of rice price policy on growth of the Philippine economy - an analytical framework.' Ch.6 in Growth of output in the Philippines. Los Baños: International Rice Research Institute.


Mindanao Development Authority 1965 A survey of resources and potentialities, social conditions, values, institutions and regional problems of Mindanao, Sulu and Palawan. Davao City: Mindanao Development Authority (mimeo).


Morrill, Richard L. 1965 'Migration and the spread and growth of urban settlement.' 

Morrow, R.B. 1966 'Palay production differentials by tenure class and school achievement.' 


Nelson, Phillip 1959 'Migration, real income and information.' 
Journal of Regional Science, 1, 2: 43-73.


Nyberg, Albert J. 1966 'Growth in the Philippine coconut industry (1901-66).' 


——— 1968 'Complementary models: a study of colonization maps.' 
Geografiska Annaler, 50B, 2: 115-32.

Oña, P.L. and S.C. Hsieh 1966 'Output growth of rice and corn in the Philippines.' 
Ch. 1 in Growth of output in the Philippines. Los Baños: International Rice Research Institute.


____ 1963 The resources, levels of living and aspirations of rural households in Negros Oriental. Quezon City: Community Development Research Council.


____ 1968 'Man's role in changing the landscape of southeast Asia.' Journal of Asian Studies, XXVII,2: 269-79.


_____ 1968 'Farm credit policy in the early stages of agricultural development.' Australian Journal of Agricultural Economics, XII, 1: 32-45.


Raison, Jean-Pierre 1968 'La colonisation des terres neuves intertropicales.' Études Rurales, No.31.


Sacay, Francisco M. and Florendo R. Naanep 1940 'A study of farm, home and community conditions in a farm village of Ilocos Norte as a basis for formulating a program of rural education.' Philippine Agriculturist, XXIX,7:555-70.


Stewart, Norman R. 1963 'Foreign agricultural colonization as a study in cultural geography.' Professional Geographer, XV,5:1-5.


Tryon, Joseph L. 1967 'Internal and external terms of trade in post-war Philippines.' Philippine Economic Journal, VI,2:189-209.


Tun Wai, U 1961 Economic development of Burma from 1800 to 1940. Rangoon: University of Rangoon, Department of Economics.

Tutay, Filemon V. 1967b 'The case of Pola. 67 occupant-petitioners dispute right of Pola Development Corporation to 500 hectares in Sto Tomas, Davao.' Philippine Free Press, April 1, 1967, pp.5, 64.


Wharton, Clifton R., Jr 1969 'The green revolution: cornucopia or Pandora's box?' Foreign Affairs, 47,3:464-76.


Wolpert, Julian 1965 'Behavioral aspects of the decision to migrate.' Papers and Proceedings, Regional Science Association, XV:159-69.


1966a 'Marketing networks and economic processes among the abaca cultivating Mandaya of eastern Mindanao, Philippines.' Report to the Agricultural Development Council on fieldwork conducted from May to August 1965 (mimeo).
