

AGRICULTURE AND THE
PEASANTRY UNDER
INDUSTRIALIZATION PRESSURES :
Lessons from the Peruvian Experience*

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Agrarian studies in Peru experienced an unusual development in the seventies, when a new generation of scholars emerged whose impact has been considerable. The advances made are the result of their collective contribution. One consequence of recent research has been the displacement of a traditional view consisting of a schematic paradigm of the Peruvian countryside that long dominated the thought of social scientists and laymen. Its origins can be traced to the portrayals by Mariátegui and Haya de la Torre of Peruvian society of the twenties, which at the time were fresh and meaningful. The paradigm can be recognized in works such as Roel (1961) or CIDA (1966) that, despite their merits, failed to place sufficient emphasis upon the new trends that emerged in Peruvian agriculture following the Second World War. The structuralism of the Economic Commission for Latin America (ECLA) and the reformist agrarian thought of the fifties and sixties reinforced this accepted interpretation that was transformed into an increasingly ideologized vision of reality.

The four central characteristics of the paradigm are: a dualist view of the rural sector as being strongly divided between a traditional rural society and an export-oriented capitalist agriculture; the *sobredimensionamiento* (overemphasis) on traditional rural society, to use Maletta's expression (1978c, 5); an emphasis on the latifundia-minifundia complex and semifeudal servitude as the central features of Andean rural society; and a marked optimism in viewing the solution to agrarian problems as redistributing land and shifting agricultural products from export to production for the domestic market. There are at least three serious omissions in this schema. No consideration is given to analyzing food supply to the urban markets. The increasingly important role of agroindustry and medium-size commercial farmers is ignored. No differentiation be-

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tween the peasantry and the integration of peasants into the market is made.

This essay will review some recent contributions that throw light on the economic evolution of the Peruvian agrarian sector. I shall then order these contributions around my hypothesis on the developmental process. I shall deliberately avoid the issue of agrarian reform and transformation of tenure systems, which deserves a survey of its own, and shall concentrate instead on the politico-economic aspects of agriculture.

OUTPUT, PRICES, AND ACCUMULATION

Output and Prices

Until recently, the most popular thesis concerning Peruvian agricultural production emphasized its stagnation, which implied a near-zero overall per capita growth rate.¹ In recent years, research has shown that although this thesis is not false, it is inadequate for two reasons. First, growth in agricultural output cannot be evaluated without taking into account the performance of other sectors and the growth of the population. The active growth experienced in the fifties and sixties by the nonagricultural sectors and the increase in total population (due to the reduction of mortality rates, especially among infants) make the growth of agriculture appear particularly low. An average growth rate for agricultural production of more than 2 percent per annum for a period of twenty-five years would be considered satisfactory for any other time in Peruvian history (such as the first four decades of this century, when the population grew only slightly more than 1 percent and industrial takeoff had not begun). Moreover, during the fifties and sixties, the agricultural labor force declined sharply in relative terms and increased little in absolute terms (less than 1 percent per annum). It therefore would seem more accurate to say that agriculture was not actually stagnant but lagged behind the growth of the Peruvian population and the economy in general. Second, output performance has been extremely unequal according to periods of time, regions, kinds of farm, and kinds of crop.

Following a period of high growth (5 percent per annum) between 1944 and 1954, a serious crisis occurred in 1955–57, primarily due to a drought. A strong recuperation, however, occurred in 1958–61. Between 1963 and 1968, growth was low, but recovered in 1969 and 1970. Between 1971 and 1976, growth was once again at a very low level, reducing the average yearly rate for 1969–76 to 1.8 percent (Álvarez 1980, 21).

Unfortunately, no sufficient disaggregate data are available for regional production. But information on sown areas and crops, the regional patterns of which are rather stable, clearly indicates that the only region where production has not grown in absolute terms (or has grown

only slightly) is the highlands. Areas under cultivation in the jungle expanded markedly, and the amount of irrigated lands on the coast grew too, mainly in the fifties (Twomey 1972, 8).

With respect to the performance of different types of units, recent works have hinted that stagnation occurred in the small subsistence properties and backward Andean haciendas. The large coastal haciendas maintained a moderate, but sustained, growth in output. Medium-size commercial properties (in the coast, highlands, and jungle) increased markedly in number and in total production. Maletta and Foronda (1980) have produced evidence that leaves little doubt as to the important growth of medium-size commercial farms.

Perhaps one of the most significant points that research has brought to light is the unequal performance of various kinds of products. Hopkins (1981b) and Álvarez (1980) have analyzed agrarian output growth by categorizing four groups of products according to their primary use: for direct urban consumption, for agroindustrial consumption, for export, and for restricted rural markets or home consumption. The results are significant: while output of products for direct urban consumption and those for agroindustrial use grew rapidly between 1950 and 1976, those products for export and restricted rural markets grew slowly or not at all. As a consequence, the products for direct urban consumption and agroindustrial use, which together represented 27.9 percent of agricultural output in 1950, increased to 65.1 percent in 1976, while those for restricted rural markets declined from 50.1 percent to 27.0 percent, and those for export from 22.0 percent to 7.9 percent.

In summary, semisubsistence production and highland agriculture in general remain stagnant. On the other hand, capitalist agriculture, which is located mostly on the coast and secondarily in the jungle and the irrigated areas of the highlands, grew rapidly and was substantially restructured: medium-size commercial farms expanded and a notable shift occurred from the production for export to production for the "solvent" internal market, that is, the cities and agroindustries. Output of all kinds showed marked oscillations, mainly correlated with climatic factors. The thesis of a stagnant agricultural economy overlooks all these developments.

Analysis according to type of product has an important advantage: it helps to study the response of supply to the expansion and shifts in the pattern of demand for food products that has occurred since the fifties. Although an overall quantitative study of this question is not available, recent works shed light on what has happened.² The main points can be summarized as follows. The combined process of industrialization, urbanization, and demographic expansion in Peru led to a large increase in the demand for food, especially for those products that constitute an important part of a typically urban diet. The classical prob-

lem of extracting sufficient agricultural produce from the peasantry to supply a growing urban demand was hardly present in Peru. Four interlocking mechanisms have served to maintain the coexistence of a stagnant peasant agriculture and a growing supply of food to the cities, thus bypassing this classical stumbling block for development. First, food imports (in some cases with state subsidies) could grow rapidly without severely competing with other imports due to increased mineral and fish exports and favorable terms of trade. Second, the rapid growth of an agricultural industry stimulated coastal producers and those in specific areas of the highlands to reorient their production. Third, there was a sharp reduction in agrarian exports, which was accomplished by the substitution of direct urban consumption or agroindustrial crops for export crops (for example, hard maize, rice, or potatoes for cotton) and by a shift toward internal marketing of formerly exported produce (as was the case with cotton and sugar). Fourth, increases occurred in the sown area and in yields of commercial agriculture due to three factors: (1) increased cultivation of crops for direct urban consumption and agroindustry in the jungle (rice, hard maize, fodder, fruits); (2) an increase in yields in products for direct urban consumption on the coast (particularly rice) due to credit support to purchase fertilizers and high-yield seeds; and (3) an increase in the commercial cultivation of potatoes and barley (for beer) in certain highland zones.

Two special circumstances merit additional attention. The first has to do with changes in the distribution of income and the second with the difference between rural and urban diets (which will be discussed further). Thorp (1969) has correctly emphasized the possible impact of changes in income distribution on the rate of expansion of the demand for food. The fact that income distribution worsened during the period 1950–66 has been shown by Webb (1977). The probable effect was to reduce the rate of increase of global demand for food. But the difference in the diets permits a distinction between two types of food demand: that for processed foods and foods for direct urban consumption and that for products for restricted rural markets. The markedly slow growth of incomes from the “traditional rural sector” (that is, compared to those of the “modern” and “traditional urban” sectors) demonstrated by Webb (1977, 39) therefore means that most of the reduction in the rate of increase of demand must have affected mainly the basic staples of the rural diet.

This system worked well (although with serious consequences for peasant incomes) as long as the above circumstances were maintained. During the mid-seventies, however, it collapsed because of four events: first, a crisis in the balance of payments prevented a continued reliance on food imports; second, a fiscal crisis ended food subsidies; third, fertil-

izer prices increased enormously in world markets, which reduced their use in commercial agriculture and affected yields; and fourth, the limits of substitution of agrarian exports were almost reached. The resulting food crisis had extremely serious consequences for nutritional standards in Peru.

The evolution of food prices and the rural-urban terms of trade have also received attention in the literature of the seventies.³ In general, food price trends were consistent with those of production and demand, although some specific aspects need further clarification. Thorp and Bertram (1978, table 13.11) and Twomey (1972, table 20) have shown that retail food prices in the cities (represented by the metropolitan area of Lima) tended to grow in the fifties and sixties slightly faster than the cost-of-living index and thus were regarded as a cause of inflation. This outcome was to be expected because in spite of rising imports and the responses of domestic output to growing demand, urban demand for foodstuffs was ahead of available supply, thus pushing retail prices up. Hopkins (1981b, table 14) nevertheless found that throughout the same two decades, the purchasing power of agrarian output fell sharply, as measured by the relation between a general index of farm-gate food prices and the price index for global supply and demand in the economy. An apparent discrepancy therefore exists between the increasing tendency of retail food prices in the cities and the decrease in the real farm-gate food-price index. Hopkins offers several possible explanations (1981b, 85–91). Perhaps the most important is the differential trend in prices to the producer according to the type of product. As might be expected from what was said earlier of the production and demand trends of the different groups of products, prices to the producer of urban consumption goods grew more rapidly than those of export and restricted rural market goods. In real terms (that is, dividing by a price index of global supply and demand), between 1950–51 and 1968–69, the price of urban consumption goods fell by 15 percent whereas that of export goods fell by 59 percent and that of restricted rural market goods fell by 34 percent. The major cause of the sharp decline in the purchasing power of agrarian output therefore seems to be the fall in the real prices of export and restricted market products. This issue nevertheless needs further research.

In conclusion, the industrialization process, with its concomitant urbanization, upward growth trends of incomes, and demographic increase, could proceed for more than two decades with a stagnant peasant agriculture without producing scarcities in the food market and with only a mild food-price inflation for three reasons: because most of the increase in demand was oriented towards certain kinds of foods; because it was possible to increase the supply of these foodstuffs by means of

changes in land usage and the development of a food-processing industry; and because it was also possible to import food staples to cover the remaining deficit.

Accumulation

Another thesis that has also enjoyed remarkable popularity until recently, one parallel to that of stagnation, is that of the decapitalization of agriculture during the fifties and particularly in the sixties and early seventies. Recent research has shown this thesis to be incorrect: an absolute retraction of agricultural investment did not occur during this period. The available evidence, however, seems to indicate that investment was maintained at moderate levels. As in the case of production, it is the comparison with the other economic sectors (where investment was very high, at least until 1968) that makes it appear that a retraction took place.

Investments in fixed agricultural capital, although not large, were by no means insignificant. Fitzgerald (1979, 154) estimates these at 4 percent of the gross formation of fixed capital in the economy in 1960–68 and 6 percent in 1969–76. These figures are probably an underestimation, given the difficulty of statistically grasping certain forms of private fixed investment in agriculture, such as improvements in livestock, permanent plantations, or the land. Even so, the percentages are not so low if one considers that during this period, the participation of the agricultural sector in the GDP was between 16 percent and 22 percent, and that the capital-output ratio in agriculture was considerably lower than in other sectors.

Various works, especially the thorough study of Maletta and Foronda, enable us to trace the performance of separate components of fixed agrarian capital. Livestock (measured in standard livestock units) grew at a small, but positive, rate (1.1 percent per annum) in the intercensus period 1961–72, with growth tending to be larger in the medium-size sector (Maletta and Foronda 1980, 68; Hopkins 1981b, 98). Tractor stock experienced rapid growth, expanding at a rate close to 5 percent per annum in the period 1951–77 (Maletta and Foronda 1980). Comparison of the census figures of 1961 and 1972 reveals, moreover, that in those eleven years tractor usage expanded greatly, as did the use of mechanical power in general. This trend was accompanied by a significant “democratization,” in the sense of its extension to small and medium-size units, especially on the coast. Nevertheless, as Maletta and Foronda recognize, “the tractorized areas . . . are the rich Coastal valleys and the Highland plains given over to commercial crops” (1980, 152). Moreover, as Álvarez emphasizes (1974), tractorization specifically favors a number of commercial crops, and there is clear evidence that a relatively low level of tractorization coexists with the underutilization of

the available stock, often because of the existence of tractors in need of repair.

Investment—public and private—in irrigation, colonization, and land improvement has also been significant. Once more, the medium and small commercial units seem to have been the most dynamic, although available evidence is not conclusive on this point. Maletta and Foronda (1980, 192), continuing the series of Twomey (1972, 6), find that in the period 1952–76, the rate of expansion of coastal irrigated land of 1.5 percent per annum was maintained at the same level as during the period 1905–52. They show also that the public investment in irrigation (about 90 percent of which was concentrated on the coast) increased considerably between 1950 and 1978: from a yearly average of 219 million in 1950–59 to 648 million in 1960–69 and 2,491 million in 1970–78.⁴ Hopkins (1981b, 136) presents data taken from CONESTCAR (1969) that indicate important private participation (especially in the highlands and the jungle) in irrigation works, drainage, colonization, and improvement of irrigated lands in 1951–64. Average participation of private investment is estimated at 59 percent, larger than the 41 percent of public investment. Finally, Maletta and Foronda show with census figures a “democratization” of the usage of irrigation waters, that is, an increased access to them by medium- and small-size properties (1980).

Similar tendencies are present in the performance of investment in circulating capital. Thus, Hopkins (1981b) and Maletta and Foronda (1980) find that during the last two decades the volume of chemical fertilizers used expanded considerably. Although these fertilizers substituted partly for the *guano de las islas*, the total of both kinds of fertilizer show a moderate growth in the content of NPK (nitrogen-phosphorus-potassium) used, around 2.5 percent per annum for the period 1950–53 to 1975–77. Comparison of intercensus figures indicates a large growth in the number of units that used chemical fertilizers, guano de las islas, or both, which increased 3.5 times between 1961 and 1972. A proportionately greater growth was registered for the middle and small units. The regional distribution of fertilizer consumption continues nevertheless to be biased heavily in favor of the coast, where more than 80 percent of the total is used (Figuroa 1976, 27). The increase in the number of users of chemical fertilizers in the highlands is closely linked to commercial potato cultivation; in 1972 one quarter of the farmers who sowed potatoes (most located in the highlands) used purchased fertilizer.

Agricultural credit, a good indicator of investment in circulating capital because loans for capitalization traditionally have been very low (about 5 percent), has grown significantly in the last few decades. In real terms, agrarian credit almost doubled between 1960 and the late seventies. As a percentage of agricultural GDP, the volume of credit has remained nearly constant since 1955 (between 16 percent and 18 percent)

and tended to grow in the second half of the 1970s (Haudrey 1978, table 5; Maletta and Foronda 1980, table 13). Some additional features may be noted: first, an important increase in the number of users, although this figure is still small; second, a degree of expansion of credit oriented toward the highlands and especially the jungle, although the coast remains the most favored region by far; and third, an increase in loans made to small and medium-size agricultural units, although large-scale agriculture continues to absorb the largest percentage of the amounts loaned.

In summary, the accumulated evidence of recent research would reject the thesis of decapitalization of agriculture. If it is true that agricultural investment lagged behind that of other sectors, data tend to show the following features: first, a persistent, although moderate, growth of agrarian capital, probably greater in the fifties than afterward; second, a tendency toward proportionally faster growth of investment in the medium and small commercial agricultural sectors; and third, a degree of "democratization" in access to some types of agrarian inputs.

AGROINDUSTRY AND FOOD CONSUMPTION PATTERNS

Characteristics of Agroindustrial Expansion

The food industry has been a traditionally neglected theme in the studies of the Peruvian agrarian sector.⁵ It has received some attention, however, from various authors in the last few years. The rapid growth of the agroindustrial sector, which Fitzgerald (1979, 264) estimates at 6 percent per annum between 1960 and 1976, and the great importance acquired by the consumption of processed foods have finally brought agroindustry to the attention of researchers. Agroindustrial expansion occurred mainly in the dairy and mill complexes (animal feeds and flour for bread, pasta, etc.), flour processing (bread, pasta, biscuits, and the like), edible oils and fats, chocolates and confectionery, the brewing industry, and the poultry industry. Based on recent research, three principal characteristics emerge.

The first is the acute level of monopolization that exists in the industry. Lajo, one of the authors who has contributed most to this theme, estimates that in 1973 nine economic groups controlled 36 percent of the gross value produced by the entire food industry, a figure that would reach 50 percent if the sugar industry were excluded (1980, 110). These percentages are particularly high when one considers that large sections of the food industry inherently are conducive to small-scale production of an artisan type.⁶ The degree of monopolization appears sharper when particular branches are considered. Thus, according to Lajo, "the Bunge, Nicolini and Cogorno groups controlled (in 1973) 88%

of the production of wheatflour used for bread and pasta; the same Bunge, Nicolini and Purina produced 80% of the animal feed, the basis of the poultry and egg industry; again, Bunge, Pacocha (Unilever) and Romero controlled 64% of oils, edible fats and margarines; and Carnation (North American) and Nestle (Swiss) controlled 100% of evaporated milk" (1980, 111). To this should be added the facts that in 1973 the four largest firms controlled 63 percent of cocoa, chocolate, and confectionery production and 61 percent of the processing of fruit and vegetables (Lajo 1980, 109), and that two economic groups (Nicolini and La Fabril) in 1974–77 controlled 69 percent of pasta production (González Vigil, Parodi, and Tume 1980, 104). The largest companies and groups have a transnational character (often because they are either direct subsidiaries of transnationals or are closely linked to them through various mechanisms) and moreover tend to operate in several economic areas.⁷

The second characteristic of Peruvian agroindustry is its heavy dependence on imported inputs. Wheat flour is the most important case: 99 percent of the wheat used by industrial mills is imported.⁸ In 1970–74 wheat imports (measured CIF) represented an annual average of \$65 million, that is, 70 percent of total food imports. In 1974–77 the value was \$108 million annually (González Vigil, Parodi, and Tume 1980, 61). A similar phenomenon appears, although on a lesser scale, in other major branches of agroindustry. Lajo calculates that in 1975–80, 45 percent of hard yellow maize and 99 percent of soya were imported (the two major inputs employed in the production of animal feeds); 76 percent of the milk used by the dairy industry and 72 percent of the barley used by the brewing industry were also imported (1980, 117).

The poultry industry is the subsector of the food industry that has expanded most rapidly, with chicken meat output multiplying sevenfold between 1964 and 1977. This industry depends on the imports of breeding species for egg-laying and fattening, baby chicken, vaccines and medicines, and grains for the production of balanced feed. Not surprisingly, it has repeatedly been compared with an assembly-line industry. González Vigil, Parodi, and Tume estimate that in 1974, of the final price (41 soles for 1 kilogram) of chicken meat, the import component constituted 63 percent or 23 soles (1980, 236). Tume calculates that in 1977 the imported component of a can of evaporated milk was 57 percent of the final price, with the can alone (totally imported) representing 25 percent (1980, 86).

The third characteristic of the agroindustry is its important, but contradictory, role vis-à-vis agricultural production and food demand. Two aspects can be distinguished here. The first concerns the relation between agroindustry and domestic production of agroindustrial inputs. The expansion of the agroindustrial market undoubtedly has stimulated the production of agrarian inputs greatly in certain lines, and the pro-

cessing firms themselves have participated actively during a certain period in the financing of domestic input production, genetic improvement, technical extension, and consequently, the improvement of yields. This is clearly the case in the production of hard maize, barley for brewing, and particularly milk.⁹ There are nevertheless other lines (mainly wheat and, to a certain extent, oilseeds like soya), in which agroindustry has played the inverse role: it stifled from the beginning the domestic production of the relevant agricultural inputs, preferring to import them. In the case of wheat, because of the close link between the industrial mills and large international traders, the mills (and as a consequence of their pressure, the state) preferred to import the hard wheat used by agroindustry instead of promoting its domestic production or adapting technology to process the soft highland wheat.¹⁰ In those lines in which the agroindustrial market and the promotional activities of the plants initially stimulated a significant expansion in output, imports of competitive inputs began to hinder that expansion after a certain time. I propose the following hypothesis on the evolution of that relation between agroindustry and domestic production of inputs.

There occurred a first stage (the time limits of which would have to be precisely defined in each case) when the plants needed to ensure a minimum of domestic inputs (such as fresh milk) as part of an adequate input mix, and in which domestic production could expand rapidly at prices able to compete internationally due to special favorable conditions.¹¹ It was during this stage that agroindustry had its greatest impact on the reorientation of Peruvian agriculture in many regions. This stage was succeeded by a second one in which the agroindustrial firms were no longer interested (or as interested) in the expansion of domestic input production and preferred to satisfy their growing input needs by augmenting imports.

There appear to be three explanations for this change. The first, particularly relevant to the cases of milk and barley for brewing, concerns declining yields. During the first period, producers who because of size, location, land quality, or other reasons had the most favorable conditions were incorporated as suppliers of inputs. After this incorporation, a Ricardian-type situation occurred: once a first stage of increased yields had been completed (for example, in genetic improvement), the promotion activities of the firms showed rapidly decreasing marginal returns, and the distant locations of the new suppliers considerably increased transportation costs. The second explanation is to be found in the relation among international prices of inputs, rates of exchange, and internal inflation. Although detailed studies are not available on this issue, it is evident that the agroindustrial companies are very sensitive to price differences between the internal and external markets. It seems that the combination of dairy and feed grain surpluses in the

international markets, an overvalued exchange rate, and domestic inflation all stimulated the import of inputs during the second period. Finally, there was the official policy of not giving tariff protection to the domestic production of agricultural inputs and, especially during the seventies, of making available financial facilities and subsidies for their importation. One perhaps could add to these three reasons some considerations concerning the global strategy of the transnationals that operate in the Peruvian agroindustrial sector,¹² but it is not easy to obtain evidence concerning this aspect.

To summarize, in the first stage, imports seem to have been used to maintain moderate domestic prices and to complement national production without checking its expansion, while in the second, they have served to put a brake on both prices and the growth of domestic production. This argument does not exhaust the subject of the contradictory effects of agroindustrial development, which also appear in the relation between the food industry and domestic food demand. The food industry was capable of quickly responding to the large expansion of food demand during the two decades prior to 1975. It therefore contributed in an important and successful way to maintaining supplies for a rapidly growing population (especially the urban sector) at prices that did not increase substantially. That success, however, was based on goods that did not adjust well to the nature of national resources or needs and that scarcely incorporated the poorest producers of the country—the highland peasants. The three best examples of such goods are French-type bread, evaporated milk, and poultry.

French-type bread is produced from hard wheat, 99 percent of which is imported. Its enormous popularity (like that of pasta, which is also produced with imported wheat) has taxed heavily the import bill and also has impeded the participation of the Andean peasants in supplying the growing national demand for bread.¹³ A protection policy for domestic wheat production and a policy of popularization of bread made with soft highland wheat (or with a mixture of flours) for urban consumption would have allowed the peasants to participate in the bread market and would have reduced the rate of growth of wheat imports.¹⁴

In the case of milk, the flooding of the market by cans of evaporated milk produced by *Perulac* (Nestle) and *Leche Gloria* (Carnation) has limited the development of local small-scale dairy industries widely distributed throughout the country that could have supplied fresh milk. The dairy industry moreover decided not to produce powdered milk, which would have been a cheaper and more efficient way than canned milk to satisfy the population's needs, especially for those with low incomes. The industry also lobbied against (and successfully prevented until 1980) the authorization by the state of powdered milk imports except for industrial use (see Lajo 1980).

The recent vertiginous expansion between 1970 and 1977 of the poultry industry was partly a response to the slow growth of beef production. Between 1950 and 1970, domestic beef output grew only 2.7 percent per annum, far below the demand for meat. This situation resulted from competition from imported beef and from the complete absence of any production policy for domestic beef. The poultry industry also took advantage of the restriction on beef consumption resulting from the imposition of a closed season of fifteen days per month in 1971, a final blow to the domestic beef industry. Thus, during the seventies, poultry took over the market for beef.¹⁵ Given the previously noted high-import content of poultry, the foreign exchange savings on beef imports were cancelled by the import expenditures for the production of poultry. Therefore, no net savings occurred.¹⁶ The effect of the change from beef to poultry was to restrict the market to the highland peasants, who are the major cattle raisers. During the years 1975–77, the policy of encouraging poultry at the expense of beef meant that the combined consumption of both meats would go up 9 percent in relation to the year 1970, after a fall of 17 percent in 1971–74.¹⁷ A better result would have been achieved with a policy of strong support for domestic beef production and moderate expansion of the poultry industry, with the additional advantage of favoring the highland peasantry (in place of the middle- and large-scale capital, particularly from Lima, and the agroindustrial companies that dominate poultry production) and of reducing the growth of imports.

Dietary Changes and Food Dependency

The growth of consumption of processed foods by agroindustry is part of a more general phenomenon that recent research has also revealed—dietary changes.¹⁸ These changes can be summarized in the following way. First, what Hopkins (1981b) correctly calls a shift “from the regional dish to the national menu” has taken place, characterized by the substitution of processed for natural foods¹⁹ and by the “internationalization” of the diet, which is becoming increasingly similar to that of temperate European and North American countries.²⁰ Secondly, the “national menu,” which dominates the urban diet, has also begun to expand into the rural areas. A distinct diet nevertheless continues to predominate in rural areas (especially in the highlands and jungle) that is linked to local resources and habits. In the urban diet, the principal calorie sources are rice, bread, white sugar, oils, and fats, and, to a lesser extent, pasta, potatoes, and milk; the principal protein sources are milk, beef, chicken, eggs, and fish. In the contrasting “rural diet” (especially in that of the highlands), potato, wheat, maize, barley, and to a lesser degree, fats and brown sugar are the main energy sources; proteins are obtained from the cereals themselves, from certain legumes, and from some meats such as

lamb, pork, and *cuy* (guinea pig). Third, within the urban diet itself there is a differentiation closely linked to income levels. For example, rice, potatoes, sweet potatoes, legumes, fish, and entrails are consumed more in the lower-income strata while beef, fresh milk, eggs, bread, and fruit are consumed in the higher-income strata; chicken is consumed at all levels, but particularly by those in the medium-income bracket.

In a well-documented work, Samaniego (1980) has emphasized two consequences of these tendencies in the pattern of food consumption: food dependency and the inefficient use of national agricultural resources. Food dependency is linked to the large expansion of agro-industry and its input import requirements (previously outlined) because the proportion of foods imported for final consumption is small, and particularly because chicken substituted for the greater part of red meat imports.²¹ With respect to resource utilization, Samaniego correctly points out that "the pattern of food consumption which has as a base the products from wheat, dairy products, vegetable oils, chicken, eggs, and meat, is the historic result of agricultural and industrial development in the metropolitan countries, which are located in temperate zones" (1980, 218). After analyzing the characteristics of the agricultural resources in these countries, he concludes: "In general, the predominant pattern of food consumption in the metropolitan countries maintains a logical relation with agricultural resources and climate. Nevertheless, that pattern, in countries with geographical-ecological conditions similar to those of Peru, and especially with limited agricultural resources, is contradictory to the development of their national agriculture and industry."

The question of which food pattern can best be adapted to national resources is a topic that requires urgent attention. My hypothesis is that a "menu" better suited to the national resources ought to incorporate to a much greater degree the highland tubers (potato, *oca*, *olluco*), highland cereals (soft wheat, soft maize, *quinua*, *canahua*), legumes, manioc, fruits, and green vegetables. It seems to me that the output of all of the aforementioned crops could be rapidly increased, mainly through the improvement of yields. A menu such as this would integrate the highlands much more into the supply of the national market and make more extensive use of the dry highland areas.

At present, the national menu is based on capitalist coastal agricultural production, to a much lesser extent on that of the jungle and the irrigated areas of the highlands, and on an alarmingly increasing proportion of imports. Samaniego (1980, 224) calculates that in 1975, of the area harvested of crops directly linked to urban consumption, 70 percent was on the coast, 24 percent in the highlands, and 6 percent in the jungle. In contrast, according to the 1972 census, the percentages of regional land use (calculated in standardized hectares) are 42 percent on the coast, 47 percent in the highlands, and 11 percent in the jungle (Caballero and

Álvarez 1980, table 2). Coastal capitalist agriculture moreover tends to displace highland producers from the urban markets for those products of Andean peasant origin that are kept in the urban diet. The most important case is the potato. As a result of the expansion of its cultivation in the valleys to the north and south of Lima during the seventies, the participation of the highland peasantry in the supply of potatoes to Lima fell from 46 percent in 1971 to 11 percent in 1978 (Samaniego 1980, 228).

Although the efficiency of the present food consumption pattern has not yet been researched systematically, the data that Torres la Jara (1981) presents on the implicit price per calorie of various foods seem to indicate that this consumption pattern is not efficient. Furthermore, the information presented by Ferroni (1979) suggests that a national menu closer to the rural diet would have positive effects on nutritional levels. But apart from considerations of efficiency of resource utilization, it is clear that the current food consumption pattern is frankly inadequate from the point of view of income distribution and regional equilibrium because it marginalizes the highland peasantry. The efficiency in the use of resources and the effects of resource use on incomes indeed cannot be treated separately: better usage of resources can only be judged in relation to its capacity to raise incomes, improve their distribution, or both. As I have argued elsewhere (Caballero 1980b), the agricultural resources of the highlands cannot be of concern only because they may serve to augment the quantity of food available to the nation, but also because they are the livelihood of a population (close to 25 percent of the poorest families of the country) whose opportunity to improve their economic standards depends on better exploitation of those resources.

The issue of food dependency merits two additional comments. The first is that under Peruvian conditions, an attempt to reduce food dependency does not have to be accompanied by a reduction of exports of agrarian origin. In coastal cultivation of cotton and sugar, the reduction of exports has already taken place through a change in crops (maize-sorghum or potato for cotton) and the increase of internal consumption of both crops. It does not seem to me advisable to substitute exports any further by decreasing the sown areas of these crops; the margin that remains is small (except in the extralarge pima cotton of Piura, which because of its special characteristics would be convenient to maintain), and future expansion of internal consumption of both products must be anticipated. In the production of wools and coffee, little competition occurs for resources because there are few alternative uses of highland pastures and shade-protected jungle slopes. The same can be said of other minor export crops that are also located in mountainous jungle areas, such as cocoa and tea.

It is possible to increase substantially the areas already sown with export crops in the upland and lowland jungle and to introduce new

export crops without competing with production for the internal market. The improvement of upland Andean pastures and of sheep and camelidae (llamas and alpacas) could increase simultaneously exports of wools and the domestic consumption of meat. A policy of reducing food dependency hence could, and in my view should, be accompanied by the expansion of agrarian exports. It is worthwhile emphasizing this point explicitly because in some analyses of Peruvian agriculture it would seem that the reduction of food dependency implies a tendency toward commercial autarchy. This implication is not so.

The second comment refers to the question of comparative advantage. This principle of resource allocation certainly has to be taken into account in any planning exercise. But it is neither a supreme principle nor the only one to be considered. It can and usually does conflict with other principles. Its pros and cons ought to be weighed at every opportunity. It is not only a question of dealing with dynamic versus static advantages or of infant industry arguments. In the present case, the anticipated reduction of food dependency by means of a new pattern of food consumption that would use more intensely poor agrarian resources such as those of the highlands (without comparative advantage), is based on four distinct reasons.

The first reason is its positive effect on incomes and their distribution (personal, sectoral, and regional), as previously mentioned. The second is the need to isolate domestic food prices from the fluctuations of international prices and from the movements of the rate of exchange. With heavy food dependency in a poor country such as Peru, where the purchase of food requires a high percentage of family income, the exchange rate becomes a rigid economic policy variable whose alteration has a very high social cost: devaluations automatically increase food prices, pushing up the rate of inflation; revaluations automatically reduce the competitiveness of national agriculture vis-à-vis imports, reducing the income of the producers. The third reason refers to the availability of foreign exchange. It is clear that the reduction of food dependency would leave some foreign exchange free for other uses. A subtle argument in favor of specialization according to comparative advantage certainly would take into account the usage of foreign exchange, trying to prove that it is more profitable to allocate foreign exchange to food imports than to struggle to increase domestic agricultural production. If one alters the terms of this reasoning and asks what is the best way to increase the total availability of foreign exchange, the advantages of reducing food dependency may become clear. There are no calculations on this (a task that remains to be done), but it does not seem to me too optimistic to suppose that within certain limits of time and capital, more foreign exchange could be generated per sol invested in expanding internal agricultural output (and restructuring the diet) in order to sub-

stitute food imports than in increasing mining, oil, fish, or manufactures exports. There is, finally, a political reason to work against food dependency that, although difficult to evaluate, is of importance—the desirability of reducing national vulnerability vis-à-vis those countries and companies that have strong control over the international food trade, basically the United States and the food transnationals. For example, Mexico, a country that traditionally has guarded its sovereignty zealously, has begun to question seriously its food vulnerability and to become alarmed by its growing grain imports.

To conclude this section with a comment on agrarian policy, no characteristic in Peruvian economic policy has been more consistent in the last twenty years than that of its pro-urban bias. The treatments received by agriculture and industry were diametrically opposite. While industry received indiscriminate protection, following the Law of Industrial Promotion of 1959, agriculture was subject to a lack of protection that was equally indiscriminate: there were no tariffs on agrarian imports, exports were seriously taxed, food prices were intermittently the object of regulations and controls designed to maintain them at low levels, competitive food imports were subsidized during various periods, and the internal price of imported products was kept artificially low in various periods. In short, the policy was consistently oriented toward keeping food cheap in the urban markets at the expense of a sustained disincentive to agriculture. The only case in which the agrarian policy can claim success is that of rice. This crop succeeded because the maintenance of moderate prices to the consumers was skillfully combined with technical extension and credit, a policy of incentive through refuge prices and an efficient system of state marketing.

PEASANT ECONOMY

Size and General Characteristics

Depending on the definition and calculation methods used, the number of peasant families can be estimated at between six hundred thousand and one million in 1972²² (I believe it to be closer to the latter figure). If peasant families numbered around nine hundred thousand, for example, they would represent approximately 27 percent of the national population. The majority of the peasantry (around 80 percent) is to be found in the highlands. Evidence suggests that the size of the peasantry has grown only very slowly since 1961 or before. The rural population, for example, grew only 0.47 percent in the intercensus period (1961–72), decreasing in some departments (Maletta 1978c, 12). The economically active population in highland agriculture grew in the same period at an even slower rate of 0.26 percent per annum²³ (Caballero 1981, 138).

Some of the classical characteristics of the peasantry have receded considerably. The cultural features that are easier to measure relate to formal education and autochthonous languages. The illiterate population in the rural areas, for example, declined from 42 percent in 1961 to 34 percent in 1972 for males, and from 76 percent to 69 percent for females, with the change being much more pronounced for the younger age groups. Infant schooling in rural areas has greatly increased, reaching 90 percent. There has also been a relative reduction in populations who speak Quechua and Aymara as well as an absolute fall in those who do not speak Spanish, a group in the rural area amounting to around 20–25 percent in 1972 (Maletta 1978c, 21–26). The subjection to relations of a semifeudal type, especially payment of labor rents by peasants to landlords, had already declined by 1961 and continued to diminish thereafter. A review of the 1961 and 1972 census figures and of other quantitative surveys enabled me to verify the following: “1. The lack of importance of the *colonato* at the end of the fifties and beginning of the sixties. 2. The relatively reduced importance of rent payments (in money, kind of labour) already by 1961. 3. The expansion of peasant holdings in the sixties at the expense of the lands of the larger units, and 4. The decline in importance of rent payments during the sixties” (Caballero 1981, 318). The Peruvian peasants are basically either owners or freeholders of their lands; by the second half of the sixties, we can estimate with certainty that rent-free peasants constituted more than 80 percent of the total. They generally live grouped in communities or villages, many of which have a somewhat autonomous organization and a formal collective right over the land, although actual usage is by the individual or family and is passed on through inheritance.

The previous statistical information, as well as a vast anthropological literature on the “modernization” of the Andean peasantry, points toward the existence of important changes. It is clear that the peasantry has experienced a deep cultural and commercial transformation in the last thirty years, but one that has not been accompanied by a true economic revolution. Taken overall, the Andean peasant economy is maintaining itself at a level of simple reproduction, at least during the last two decades: output, yields, accumulated capital, incomes, and population have grown little or not at all.²⁴ Even if the peasantry cannot accumulate as a whole (as shown by the very low averages of saving and investment found in the surveys of household budgets by Figueroa [1981, 56] and González [1980, 56]), individual accumulation and growth nevertheless may be found in certain areas because there is an important differentiation within the peasantry. A high rate of natural population growth also exists, but not of the resident peasant population due to the considerable out-migration (probably higher than 1 percent per annum [Caballero 1981, 145]), and a rapid incorporation of the peasants into the

market has taken place. The global situation of simple reproduction therefore cannot be understood as a static condition: it occurs and re-occurs in a context of change.

Market Integration

Since the early colonial period, the Andean peasantry has participated in the market. It is not known, however, how that participation evolved until it reached the level of close integration during the seventies that has been highlighted by recent research. A combination of indirect statistical evidence and monographs tends to show that peasant participation in markets accelerated in the fifties and sixties, particularly with the opening of roads.

Peasant participation can take place in both commodity and labor markets. Based on data from the Encuesta Nacional de Consumo de Alimentos (ENCA) analyzed by Amat y León (1977), those of a study on the peasantry of Cajamarca (CRIAN 1974), and those of various studies of peasant incomes conducted by Comisión de Apoyo y Coordinación para la Reforma Agraria (COMACRA), I concluded that at the beginning of the seventies, the average share of monetary income in the total income of highland peasant families fell between 65 and 80 percent (Caballero 1981, 228). In the light of other works, this estimate now seems to me somewhat high; I think that a margin of 60–70 percent is more acceptable. Maletta, in reinterpreting the ENCA data, estimates the share of monetary income for the rural highlands (where nonpeasant families are also included) at 69.8 percent in the north, 70.1 percent in the center, and 55.8 percent in the south (1978c, 53). The data of Figueroa's study (1981, 69) on eight southern highland communities, which were selected as among the most "traditional" in the country, indicate a participation of gross monetary income (that is, including purchased inputs) in the total gross income ranging from 31.0 percent to 59.2 percent, with an average of 50.5 percent. The results of a survey of ten communities in the Pampa de Anta (also in the southern highlands, but more commercialized than those studied by Figueroa because of their proximity to Cuzco) reach an average of 63.0 percent (González 1980, 46).

Peasant money incomes are derived from the sale of produce (agricultural, livestock, handicrafts), from commerce, and from wage labor. The share of this latter source is important. Figueroa estimates it at 19 percent of the total income (monetary and natural) for the average of the communities that he studied (1981, 75). González (1980, 46) finds in the communities of the Pampa de Anta an identical average of 19 percent. Nevertheless, this figure probably underestimates the overall share of the salaried income in the highlands because the peasantry of the southern area is generally less salaried than that of the center or the north. The

highland average seems to be between 25 and 35 percent (Caballero 1981, 218–20).

Wage incomes are derived from two sources: the local market and distant labor markets, where participation implies a temporary migration. There are no global data on the relative importance of each one. In the communities studied by Figueroa (1981, 79), 57 percent of wage income derives from the local labor market, and 81.2 percent in those studied by González (1980, 46), but the latter are a special case because the employment opportunities in the city of Cuzco form part of the local market. The general importance of the local labor market in the highland countryside cannot be doubted. It is a market mainly casual in nature for agricultural tasks in which the peasantry participates actively on the supply and demand sides. Maletta used the 1972 census data to estimate that 40.6 percent of the cultivated surface of the highlands corresponds to agricultural units that have employed wage labor that is permanent or casual, but mostly the latter (1978c, 41).²⁵ Also, according to the 1972 census, 37.5 percent of highland agricultural units hired casual workers and 1.2 percent hired permanent workers (Caballero 1981, 21). It is notable that the percentage of usage of casual wage labor varied little with the size of the agricultural units, which indicates that the peasants participate on the demand side of the labor market together with the medium and large-size landholders. Finally, Amat y León and León estimate on the basis of ENCA data that in the Peruvian countryside in the two lowest income brackets, the percentages of families with wage incomes are 33.4 percent and 55.8 percent respectively, and that the percentages of families in which the principal source of income is from wage labor are 13.9 percent and 29.2 percent respectively (MEF 1977, table 40, statistical appendix).²⁶

Two more illustrations of the importance of the incorporation of the peasantry into the market concern the marginal role played by barter exchange and the dependency on purchased foods. Figueroa and González provide information substantiating that barter has little significance. In the communities studied by Figueroa, barter averages 5.6 percent of the total value of the exchanges (1981, 65); in those studied by González, only 1.4 percent of the potato crop, 3.5 percent of maize, 0.9 percent of barley, and none of the broad bean crop are bartered (1980, 43). Food purchases are in both cases the principal expenditure item, reaching 48.5 percent (including *aguardiente* and coca leaves) of monetary expenditure in the communities studied by González (1980, 54) and 44.2 percent in those studied by Figueroa (1981, 81).

In summary, recent research has revealed that by the beginning of the seventies, the Andean peasantry was deeply integrated into the market. On average, more than 60 percent of income is monetary; the amount of agricultural products sold is slightly larger than that con-

sumed at home;²⁷ participation in the labor market (local and nonlocal) is fundamental for the reproduction of the peasant economy; and the peasants not only appear in the casual labor markets on the supply side but also, albeit to a lesser degree, on the demand side. Consequently, if when analyzing the general tendencies of production and food consumption, its pattern of evolution is found to have tended to marginalize the Andean peasantry, that does not mean that they have not been incorporated into the market, but rather that the integration has been such that it has not generated an overall increase in peasant output or income.

Peasant Differentiation

As in the previous case, information on the current situation in the seventies is more abundant than that on its evolution; we can only infer from partial sources that peasant differentiation accelerated in the fifties and sixties. It is clear that in the seventies, the inequality of resources and incomes within the peasantry was significant, both among peasant villages and within them.

Beginning with resources, district-level data from the 1972 census show significant differences in the averages of land and livestock per agricultural unit among districts. Monographs of communities and other peasant villages (for example, those of COMACRA) concur in showing important differences in the amount of land and livestock per family within the same locality. It is possible that both sources exaggerate the real inequality due to lack of consideration of the differences in land quality and family size. Data on the communities of the Pampa de Anta presented by González (1980, 13) avoid at least partially the problem of the differing quality of land by converting irrigated, unirrigated, natural pasture, and fallow land into homogeneous hectares. Even so, the inequality is important: the Gini coefficient for the overall sample is 0.46.

Better information is available on income differences. The ENCA data, processed by Amat y León and León (1977), enabled me to conclude that "the income differences within the rural Highland area seem to be similar to those which exist within Peru. That is to say, at a much lower average level of income, the Highlands seem to reproduce the vastly unequal pattern of income distribution which characterizes the country as a whole. . . . [This pattern] is roughly the following. Arranging separately Peruvian and Highland families in ascending order of income, in both cases half of the income goes to 86% of families who can be called 'poor' (relative to their respective distribution), 20% to 9% of 'middle' families, and 30% of income to 5% of 'rich' families" (Caballero 1981, 210–11). The aforementioned refers to the rural highlands in general, but the results obtained by Webb (1977, table A4), based on informa-

tion from eight studies by COMACRA on peasant incomes, are very similar. Figueroa (1981, 84) finds Gini coefficients ranging from 0.29 to 0.53 in the eight communities that he studied, and González gives an overall Gini coefficient of 0.57 for the ten communities surveyed in the Pampa de Anta (1981, 84).

Thus, there can be little doubt as to the inequality of resources and incomes, but it does not seem to be accompanied by those characteristics usually associated with differentiation. They are, according to the tradition laid down by Lenin in "The Development of Capitalism in Russia," a dynamic land market and the tendency toward a sharp division of the peasantry into an agrarian bourgeoisie and an agricultural proletariat. First, the analysis of the 1972 census data shows that the percentage of land rented (or subjected to other types of indirect tenure) and that of agricultural units renting lands were very small (Caballero 1981, 104, 315). This estimate is confirmed by household income surveys that consistently show very small income percentages deriving from rent. Furthermore, land renting within peasant villages, when it occurs, usually takes the form of sharecropping with payment in kind. In the communities of the Pampa de Anta, for example, 82 percent of the lands under indirect tenure were sharecropped (González 1980, 11). Second, the number of landless agricultural laborers in the highlands is very low (in contrast to that of peasants who are employed as casual laborers), and only 0.9 percent of the agricultural units in the highlands of less than fifty hectares hired permanent workers in 1972 (Caballero 1981, 121).

Another important topic that scarcely has been studied is that of the relation between the level of peasant income and its composition. Figueroa's work is unique in that he examines this relation. To do so, he estimates independently the parameters of six regression equations, where monetary incomes derived from six separate sources (agriculture, livestock, commerce, and wages from local labor, from local skilled labor, and from temporary migration) figure respectively as the endogenous variable, with the total monetary income as the exogenous variable. The observations from the overall sample are simultaneously used (including dummy variables to neutralize the differences between communities), and two specifications are made, one linear and one logarithmic. The resulting R^2 are significant at 5 percent in every case, although not high (from 0.494 for commerce to 0.108 for wages from temporary migrations). The regression coefficients are also significant at 5 percent, with the exception of that for wages from temporary migration, and all are positive, save that for the income derived from local wages. The elasticities are positive, with the exception of that for the income from local wages, and they are larger than one for the monetary incomes from livestock and commerce.

Based on these results, Figueroa concludes that "the richest fam-

ilies in the peasant communities derive more income from *every* source, except from wage labor within the community. This is due to the fact that these families have access to a larger quantity of *all* the resources which exist in each community." He also finds that "the proportion of agricultural monetary income in total monetary income diminishes with the income level; the same occurs with wage income from migrations. In these two cases, the elasticities are less than one indicating that these incomes constitute a decreasing proportion of the total income." These results are interesting because they suggest three conclusions: first, it is the poor peasants who are mainly employed in the local agricultural labor market; second, it is not only differences in agricultural resources that influence peasant differentiation but also training, which gives access to the skilled labor markets, and temporary migration opportunities; and third, the rich peasants are those who proportionately have more commitments to livestock and commerce, but not to agriculture.

Economic Organization

There are four determining elements of the economic lifestyle of the peasantry: nature and resources in general, the relation to the market, social organization, and the "motor element." In the Andean case, nature is decidedly heterogeneous with respect to climate and soils, with pronounced microclimatic variations, market seasonality, and diverse risks (droughts, frosts, and landslides). The ecology is "vertical," that is, mountainous, and land is scarce and of poor quality. The relation with the market is close, as has been shown: peasants do not take their surpluses to the market after covering their necessities; in their resource allocation strategy, production for the market is present from the beginning. They depend on the market not only for the occasional purchase of tools or "luxury goods" that the domestic economy cannot produce, but also for articles basic to survival (food, clothing, and tools). Social organization is based on the family and the family exploitation of the land, although it also includes various types of cooperation for different purposes. The "motor element" is the satisfaction of family necessities (present and future) rather than accumulation per se or any abstract principle of reciprocity.

Currently, the dominant opinion among economists and economic anthropologists who have concerned themselves with the Andean peasantry is that within the conditions described, their economy is efficient. Aspects that at first sight may appear to show inefficiency, such as widespread fragmentation of land, are found on closer inspection to be consistent with a strategy that makes the best possible use of microecological variations, tends to diversify risks, and plans activities in such a way that labor requirements are not heavily concentrated into

certain weeks. The technology is better adapted to the local milieu than is usually assumed, although it doubtless could be greatly improved if an energetic policy in this direction were pursued.²⁸ Recent research has shown the importance of seasonality and risk. Seasonality is fundamental: it is the articulating element of much of the peasant economic and social life, especially the sequence of activities and temporary migrations (Caballero 1981). Equally fundamental are the attempts to reduce risks in order to ensure survival. Fragmentation of plots, especially at different ecological niches, diversification of activities, and even certain types of resistance to the usage of modern inputs, can, and probably should be, interpreted as a way in which peasants confront risks.

Taking both factors into account, Figueroa puts forward a hypothesis of the strategy of labor allocation in the peasant family economy: "of the total labour available to the family, one part is dedicated *first* to agricultural activity and the *remaining* amount is used in self-employment for the production of Z goods [handicrafts, commerce] and in employment in the labour markets. We can hypothesize, therefore, the existence of an *order* in the allocation of family labour to activities A-P [agriculture-livestock] first and Z-L [handicrafts, commerce-wage labour] after" (1981, 95). He later points out that "the hypotheses of risk aversion and agricultural seasonality together imply that the production of Z goods does not compete in a significant way with agricultural production, but with wages prevailing in the labour markets. This means that the peasantry can dedicate itself only partially to agriculture and still consider it the most important source for their economic subsistence" (1981, 99). This hypothesis is attractive and is congruent with my own experience. It nevertheless has the limitation of referring exclusively to labor and of relating its order of allocation to the priority of activities rather than to objectives.

A more general hypothesis, although one perhaps more difficult to prove, would be to distinguish two stages in the resource allocation planning of the peasant family, in accordance with the attitude toward risk and the goals pursued. In the first stage, which is dominated by risk aversion, the peasant allocates his or her resources (labor, time, land, money available for productive ends, and animals) in such a way as to maximize the probability of ensuring basic necessities. He or she may follow here what Lipton (1968) has called an "algorithm of survival." Even if it is possible, but not necessary, that agriculture or livestock raising dominates this phase, it does not have to be the only activity; production of certain handicrafts, migration periods, or commercial activities, provided they carry few risks, can be planned. Crop planning will definitely place emphasis on production for home consumption, but it is likely that something to sell will also be included (for example, barley for brewing, a low-risk crop with an assured market) because the peasant

economy needs to ensure some money availability. In the second planning stage, the attitude toward risk is neutral or possibly positive, and resources left over from the first stage are allocated in such a way as to maximize net income. Here, agricultural activities can be planned in which risks as well as potential returns are high (for example, commercial production of potatoes). Some production for family consumption that is not necessary for survival and implies risks, but which is valued by the peasant family, can also be planned (such as the sowing of maize, perhaps for the preparation of *chicha*, in the uplands, where climatic hazards are great).

From an anthropological perspective, Golte (1980) has presented an interesting and ambitious hypothesis on the rationality of the Andean peasantry. According to his thinking, the combination of resource poverty and ecological heterogeneity has induced Andean peasants throughout history to adopt a productive strategy based on combined agricultural-livestock cycles in such a way as to make the best possible use of available labor throughout the year. The Andean peasants cannot permit themselves "the luxury" of the seasonal inactivity characteristic of peasants with fertile lands in temperate climates or monsoon regions. They must overcome seasonality through a careful combination of crops and breedings, exploiting the marked microclimatic differences. To do that, interpeasant cooperation at different levels is essential. The institutional and kinship links and the norms of reciprocity and redistribution help to establish adequate forms of peasant cooperation; therefore, according to Golte, they must be understood as a means to guarantee this cooperation.

The theme of cooperation in the Andean peasant economy has received a great deal of attention from anthropologists,²⁹ but little from economists, and no quantification has been attempted except that by González for the communities of the Pampa de Anta. He estimates that on average each peasant family gives and receives more than thirty-one working days per year under the reciprocal labor exchange system. If one assumes that reciprocity includes all family members of a working age (between seventeen and fifty years), which is exaggerated because this area is normally male-dominated, and one also assumes that there are 265 working days per year, the figures presented by González (1980, 33) allow one to calculate that the work performed under the labor exchange system represents 5 percent of the total family labor available and around one-third of the work performed outside the family holding. If one assumes instead that the labor exchanges only include males, it represents 10 percent of the male labor force. The percentage of reciprocal labor exchanges within the total male labor applied to agriculture (which is where this arrangement is most used) must be considerably higher. González (1980, 35) also observes that "contrary to that believed, it has

been found that the *ayni* is practised throughout the year and not just during the periods of sowing and harvest." (The *ayni* is the most common form of cooperation, consisting of the reciprocal exchange of work between two peasants, who are usually male relatives.) He adds that "the generalization of the *ayni* in Antapampa is evident, since 92 percent of the comuneros give and receive *aynis*." These data are insufficient to form an opinion on the importance of labor exchange between the peasants, but they tend to corroborate the suspicion raised by anthropological monographs that reciprocal labor exchanges are far from negligible.

It has been shown previously that an important part of the average income of the Andean peasantry is derived from temporary migration. It may now be useful to summarize the research findings that deal with how income from temporary migration is integrated into the peasant economy.³⁰ First, it is necessary to distinguish two types of temporary migrations: the short, lasting one to a few months, and the long, lasting one to several years. The short migrations generally have a recurring character, involve people from different age groups, are closely linked to seasonality (they occur in the months of little agricultural activity), are mostly inter-rural, and are oriented primarily to agricultural work and secondarily to construction, services, and mining. The longer temporary migrations are not recurring (they usually constitute a sole experience in the migrant's life), they above all include young people, are mainly rural-urban, and are hardly ever oriented toward agriculture. The existence of previous contacts (personally established or through family or village network links) is of great importance in both cases.

Incomes deriving from these migrations are incorporated into the peasant economy in two different ways. Those derived from short migrations form part of the current peasant income, therefore entering into the annual income-expenditure budget. Those incomes from the long migrations constitute an investment fund whose role must be seen within the vital cycle of the peasant family. This fund is mainly invested in commerce, transport, purchase of livestock, education, and construction of a house; little is invested in agriculture or land purchases. Even if the fund plays an important role in the differentiation of the peasantry, it is not sufficient to enable overall significant accumulation within the peasant economy.

Capitalist Development and the Peasantry

This theme is currently the object of a lively debate in Peru (as in many other countries) and no agreement has been reached on it. The discussion is centered on several issues. First, whether under the pressure of general capitalist development, the peasantry will tend to disappear or not. Second, if it does disappear, at what rate, how, and to be replaced by

what. Third, if the peasantry does not disappear, will its survival imply the modification of the peasant economy and lifestyle, will peasant poverty continue, or can some sort of prosperity be expected. Fourth, in which ways is the peasantry linked to capitalism and its expansionist pressures. At the risk of oversimplification, the positions in this debate can be summarized as three.

One group of authors postulate the existence of a sort of functional articulation between peasants and capitalism.³¹ The peasants, defined as independent parcel proprietors (Montoya) or as simple commodity producers (Aramburú), play an important role in capitalist development as a cheap labor reserve (subsidized by family production in the peasants' holdings, which covers part of the cost of family reproduction) and sellers of cheap food. Either way a transfer of value takes place from the peasant economy to the capitalist sector. "It should be noted that this transfer mechanism of value implies an exploitation via absolute surplus value on the base of a formal subordination of the producer to capital," asserts Aramburú (1979, 121). The idea of formal subordination of peasants to capital (understood, erroneously in my view, as a type of putting-out labor system that does not leave an accumulable surplus in the hands of the peasant) appears also in Lajo and Quijano; the example they put forward is that of the small producers who sell to agroindustrial plants. The persistence of the peasantry is considered of great importance during the present historical period for capitalist expansion. If one accepts the premise that capitalism benefits from the existence of a peasant (subordinate) sector, then the peasantry will continue to exist, although at a level of extreme poverty that excludes the possibility of accumulation.

Another point of view is that of Maletta (1979c, 1979a, and 1979b) and Maletta and Foronda (1980). Rejecting the articulation of modes of production as an analytical scheme, they view the relation between the peasantry and capitalism as a dynamic and conflictive process leading to the destruction of the peasantry and its replacement by capitalism. They emphasize the role of the middle-size commercial farms in this process, qualifying them as a capitalist form of production even though they do not present the defined capitalist profile of large factories or huge agroindustrial plantations. The long-term tendency postulated is the disappearance of the peasantry: the majority of the Peruvian peasants (or their children or grandchildren) would be transformed into a proletariat. The capitalist production units that would replace them would nevertheless continue to be associated for a while with "transitional forms" in which capitalism is still embryonic and retains peasant features. The proletarianization of the peasantry appears to be linked to three phenomena: first, the ruin of the peasant economy due to capitalist development (through what mechanisms is not explained in detail); second, the de-

mand for wage labor that emerges due to the extensive and intensive expansion of the medium-size commercial farms (in frontier areas, in places where the large commercial farms dominate, and in the actual peasant areas); and third, the absorption of migrant peasants as wage laborers by urban services and industry (small or large) and as an urban "reserve army." The medium-size commercial farms would also become ever more economically dependent and thus would be further subjected to large commercial, banking, or agroindustrial capital (national or multinational), but without losing their direct production role.

I have explained elsewhere my view of the fate of the peasantry (Caballero 1981). I do not share the point of view of the first group of authors on the functional articulation of modes of production. It seems to me preferable to analyze the relation between the Andean peasantry and capital as consisting of two simultaneous processes of "destruction" and "re-creation." I agree, however, that the peasantry will survive for a prolonged period of time, although not for the same reasons. Peasants will survive not because capitalism finds it convenient to have them as a labor reserve and source of cheap food, but because it cannot replace them with capitalist production for four reasons.

First, as is known, capitalism has its own methods by which to create an industrial reserve army. Second, the peasantry's role in supplying the food that the development of industrial capitalism demanded was small, and it is improbable that this situation will change in the future unless deliberate and active policy is established in this direction. The supply of cheap food will be achieved through imports (if there is a capacity to import) or through increased yields in capitalist agriculture, or it will not be achieved. The information presented throughout this essay shows that if the present conditions are maintained, the peasants will have a very small capacity to supply food to the urban areas, however much they are exploited or they exploit themselves.

Third, to hold that the needs or general requirements of capital are sufficient to guarantee the continuity of the peasant economy is to assume either a high degree of identification of their collective interests on the part of the capitalists and the effective possibility of collusion or a great ability on the part of the state to represent those interests and to intervene in the economy to impose them (against the particular interests of different capitals). Neither of these assumptions appears to me to be correct. Expressed in the appropriate terminology, that which is certain and necessary at the level of the logic of capital in general is not necessarily so at the level of the sphere of competition, much less at the level of the concrete history of countries or regions. To be unaware of this truth is to ignore one of the major contradictions of the capitalist production regime—that which exists between the interests of global capital and those of individual capitals.

Fourth and last, the inability of capital to destroy and replace the peasantry has three origins. Until now, the national economy has shown itself to be incapable of absorbing peasants as wage workers or independent nonagricultural laborers at a rate greater than that of the natural growth of the peasant population, as was demonstrated previously. I see no reason why this situation should change. There are also strong ecological barriers to the penetration of capital (as productive capital, that is, in the direct exploitation of the land) in the majority of Andean peasant areas because of poor soils and difficult climatic conditions. The information presented above indicates that the "rich" peasants are not likely to reinvest their savings in the land and that practically no outside capital is invested in the peasant economy with the exception of the loans from the Banco Agrario and possibly some of the savings derived from temporary migrations. I cannot see why this trend should change either. Finally, there are also strong institutional and political barriers to clearing peasants off their lands.³²

We find ourselves, from my way of seeing things, in a situation where capitalist expansion has shown the ability (and will continue to do so, but probably to a lesser degree) to introduce important changes into the Andean peasant economy, including widespread commoditization, expansion of the casual labor market and migration, and a series of cultural transformations. At the same time, capitalist expansion is unable (and will continue to be so for the reasons I have just outlined) to absorb peasants as proletarians and replace them by capitalist production units. The erosion of the traditional peasant economy therefore is not accompanied by its complete destruction; the peasants continually re-create the conditions for their existence by adjusting to the transformations to which general capitalist development in the country exposes them. My own speculation for the future therefore is that the peasantry will go on existing, always at levels of extreme poverty, while adjusting to the changes introduced by capitalist development and occupying an increasingly marginal place within the economy as a whole.

CONCLUSION

This discussion of the major recent works on the Peruvian agrarian economy ends not only with a balance of progress made and tasks pending but also with an outline of the pattern of Peruvian agrarian development of the last two to three decades, the characteristics of which have been pointed out while presenting the results of the research. Instead of summarizing those advances and tasks pending, I prefer to conclude with a brief response to the following question: what lessons does the pattern of Peruvian agrarian development offer for the analysis of the relationship between agriculture and the industrialization process?

As a possible consequence of the strong intellectual influence exercised by the debates of the twenties on the industrialization of Soviet Russia, by those of the fifties on the development plans of India, and more recently by the dualist models, development theory has tended to view the role of the peasant agriculture in the development process in a particular way. Essentially, the peasantry is seen as providing the principal base of industrialization by generating a financial surplus that, once expropriated, can be accumulated in industry, by exporting a surplus of food to urban-industrial areas, and by supplying a flow of employable population to industrial centers. In such a context, a central task for economic policy—and an important theme of discussion for economists—is to design taxes, marketing mechanisms, price manipulations, restructuring of tenure, and incentive systems that are capable of extracting from the small peasant producers the necessary surpluses.

This model is probably correct for countries where the presence of the peasantry is overwhelming, no other significant sources of accumulation (such as petroleum, mining, large agro-export plantations) exist to supply funds to finance industrial growth, and there is no existing (or easy to develop) capitalist commercial agriculture that can supply the amount of food necessary to satisfy an increasingly concentrated, rapidly growing domestic demand. It is not, however, a general model, as the research findings on the Peruvian agrarian evolution pattern show. It cannot be easily applied to the experience of the Latin American countries, nor is it suitable, in my opinion, for countries with large white settlements in eastern and southern Africa.

In Latin America, at least since the postwar period, the peasantry's role in supplying the food required by urban-industrial growth has been moderate to small, and its contribution to financing industrial growth has been low. This situation occurs because the conditions previously described have been absent. In particular, there were sources of accumulation different from peasant agriculture from which to extract funds for industry as well as an existing commercial agriculture oriented to the internal market, whose extensive and intensive expansion capacity (through irrigation, colonization of virgin lands, and application of modern techniques) was large. Only in Central America, Bolivia, and perhaps Paraguay has peasant agriculture been playing an important role in food supply, owing to the reduced size of the internal market. But even in these countries, medium-size commercial agriculture tends to increase its participation consistently. The relatively small development of industry and of the state apparatus in these countries was not financed with resources extracted from the peasantry, but at the expense of other sources. Examples in Central America were agro-exports (coffee, cotton, sugar, bananas, tobacco, and meats) and foreign investment, and in Bolivia, mining, some agro-exports, and some foreign investment.

Throughout most of Latin America, capitalist agriculture competes with the peasantry not only for land and possibly labor (as is the case in regions and periods in which the agrarian structure is completely dual: "traditional" peasant agriculture on the one hand and "modern" export agriculture on the other), but also for access to the domestic urban market. Development theory has paid little attention to this competition. Its habit of assuming a homogeneous peasant agriculture or distinguishing at most two sectors, one peasant and another of commercial export, does not fit well the reality of the majority of Latin American countries. Three sectors have to be distinguished: peasant agriculture, export-oriented capitalist agriculture, and domestic-market-oriented capitalist agriculture.

Competition between capitalist and peasant farms to supply urban markets is carried out with unequal weapons. For reasons partially of necessity and partially historic and political, the capitalist farms control the best lands and have more access to credit and modern inputs. Their yields are therefore much larger. On the other hand, their income requirements are also greater: they need to earn sufficient income to justify their existence as capitalist farms, that is to pay labor (hired and their own) in accordance with the market wage and to obtain a profit that covers the opportunity cost of capital, apart from paying for modern inputs. To the differential-rent-type advantages that capitalist farms usually enjoy (because of access to better lands and technology), peasants can only oppose the noncomputation of the opportunity cost of their "capital" for lack of alternative investment opportunities and their capacity for self-exploitation in the absence of alternative employment opportunities.

The generally observed tendency of the participation of capitalist agriculture to increase and peasant agriculture to decrease in the supply to the internal market means that the competitive fight is being decided in favor of capitalist agriculture. It seems to me, however, that the total expulsion of the peasants from the market would be very difficult for three reasons: first, because of the physical and economic limits on the growth of capitalist agriculture and the limits of foreign exchange to import food; second, because under pressure, the peasants can drive their supply prices to very low levels in order to obtain some monetary income; third, because it is likely that the peasantry retains certain advantages for the production of some products and the supply of some markets. In the Peruvian experience, for example, peasant participation is considerable in supplying most foods to restricted rural markets and in supplying beef and potatoes (although the latter crop is decreasing) to urban areas.

Another point that the Peruvian case helps to illustrate is the important role that food imports may play in some countries. Countries

with strong export sectors can maintain a slow rate of agricultural growth and can import foods that compete with domestic production. In other countries or periods, this capability has not been possible or necessary. Colombia, Mexico, Brazil, and Chile, for example, traditionally have had an important middle-size commercial agricultural sector that is oriented toward the internal market. During the years of intense industrial development in the fifties and sixties, this sector was able to expand and intensify production, satisfying increased demand without needing to resort to high imports. In Ecuador, the acceleration of economic growth and urbanization in the last ten or fifteen years has coincided with a rapid modernization process of the landed elite and the consequent expansion of commercial agriculture oriented toward the internal market.

Finally, the Peruvian example illustrates the importance of the food industry and of changes in food consumption patterns. In Peru, as has been shown, agroindustry was of paramount importance in responding to the increases in urban food demand, and it was largely responsible for the restructuring of production, the increase of agrarian imports, and the expansion of a certain type of diet. I do not know if that role has been equally important in other Latin American countries, but I would imagine that throughout the length and breadth of the continent, agroindustry must have been the major catalyst of changes in production and food consumption in the last two decades. Two other elements must also be considered when analyzing changes in diet. First, the fact that urban consumers (with the "complicity" of agroindustry) tend to develop new tastes more in line with the pattern of food consumption of "mature" capitalism. Second, the fact that the foods that the agricultural capitalist sector can produce more cheaply and in larger quantities (or that can best be imported) do not have to be those traditionally produced by the peasantry. The increase in the proportion of marketed foods coming from the local capitalist sector (or from imports) may thus entail a change in the customary diet.

Only by incorporating into the analysis the existence of various agrarian sectors that compete among themselves and whose rates of expansion can be different, as well as phenomena such as sustained food imports, agroindustrial development, dietary changes, and the effects of shifts in income distribution can the apparent paradoxes of the development pattern of Peruvian agriculture be understood. Peru constitutes a case where for more than two decades, the slow growth of agriculture has coexisted with a rapid expansion in food demand without significant scarcities in the food market and where the peasantry has simultaneously become increasingly incorporated into the market and increasingly marginalized within it.

NOTES

1. The best indicator of agricultural production available is the index of the overall production of seventeen products that represents approximately 70 percent of the agricultural output, based on a revision of output statistics and an analysis by periods done by Hopkins (1979) and complemented by Álvarez (1980). On these bases, Maletta and Foronda estimate the growth in the period 1950–76 at 2.2 percent per annum (1980, 229). For the same years, the National Accounts indicate a growth in real terms of the GDP of the agricultural sector of 2.6 percent per annum. Both rates are somewhat lower than that of the population growth, which was 2.7 percent for the period.
2. A pioneering attempt in this direction, which has yet to be followed up, was that of CONESTCAR (1969). For recent works that are concerned to a certain extent with this theme, see Alberts (1978), Figueroa (1976), González Vigil, Parodi, and Tume (1980), Grillo (1980), Hopkins (1981b), Lajo (1978b), Samaniego (1980), and Thorp and Bertram (1978).
3. See Álvarez (1974, 1980), Carbonetto, García Lamas, and Martínez (1981), Figueroa (1979), Hopkins (1981b), Maletta (1979c), Portocarrero and Uribe (1979), Ruiz (1980), Thorp and Bertram (1978), Twomey (1972), Van Liemt (1978), and Vega Centeno (1979).
4. Constant soles of 1973. If the rate of exchange of that year is applied (43.5 soles per U.S. dollar), the figures are 5.0, 14.9, and 57.3 million dollars respectively.
5. The exceptions are the numerous works on the sugar sector.
6. In 1973, for example, there were 3,568 bakeries with less than five employees and 824 with more than five (González Vigil, Parodi, and Tume 1980, 68).
7. For a detailed analysis of the participation of the transnational corporations in the poultry and wheat complexes in Peru, see González Vigil, Parodi, and Tume (1980). A typical example is La Fabril S. A., registered in Panama and closely linked to the Bunge Corporation, one of the world's largest grain traders. Through COPSA, La Fabril controlled the manufacture of 70 percent of soap, 38 percent of vegetable oil, 23 percent of compound, 44 percent of margarine, and 26 percent of butter. Through the milling companies Santa Rosa and Sid-Sur, it controlled 27 percent of flour production, 28 percent of pasta, 24 percent of biscuits, and 11 percent of balanced feed. Apart from the latter, it also controlled 50 percent of cotton ginning and had strong interests in textiles, banks, and insurance (Parodi 1980).
8. The wheat used by the industrial mills, which use cylinder milling machines, is hard wheat with a high gluten content that produces a flour suitable for the production of the French-type bread. The wheat produced in Peru (wholly in the highlands) is soft and is consumed directly or processed into flour through artisan mills to produce the highland-type bread.
9. On the expansion of dairy production in Cajamarca and Arequipa as a consequence of the establishment of processing plants and its effects, see Caballero and Flores (1976), Deere (1978), Eslava (1973), Jelacic (1978), Merino (1978), and Taylor (1979). On the expansion of malt barley in the southern region, see Hopkins (1978). On maize, see Rabinovich (1978).
10. See an analysis of this question in González, Parodi, and Tume (1980).
11. In the case of milk, well-located and fertile lands existed that could easily be converted to the production of pastures and fodder. There were also *hacendados* and middle-size growers with sufficient capital and entrepreneurial skills to go into raising dairy cattle. In the case of maize, the tendency of cotton prices to fall after the boom associated with the Korean War made it increasingly attractive to shift lands that formerly had been sown with cotton to maize. In the case of brewing barley, increased needs for monetary income induced a significant number of highland peasants to add brewing barley to their crops. The promotion activities of the companies (granting seed and credit), the adaptability of the crop to the uplands, its resistance to plagues and frosts (which makes it low risk), and its minimal labor requirements all contributed to the expansion of brewing barley acreage.
12. For example, Perulac, the subsidiary of Nestle in Peru, had planned for a long time to

- promote dairy cattle and to open a new plant in the region of Tarapoto, but has stopped doing so for global strategy reasons, or so it seems.
13. Domestic wheat production, most of which is in the hands of the highland peasants, has declined from 155,000 metric tons per annum in 1951–53 to 127,000 metric tons in 1974–76, according to the statistical series compiled by Hopkins (1981a). According to the 1972 agricultural census, in that year 141,431 hectares of wheat were sown in the sierra. Highland wheat production could be increased much more, if an incentive for it existed, by increasing yields and areas sown.
 14. See a collection of proposals for the substitution of wheat imports in Linares (1976). Furnish and Muñoz (1966) analyze the characteristics of domestic wheat and its competition with imported wheat.
 15. Something similar happened, although on a much smaller scale, with another line of production much closer to industry than to livestock raising—pork meat, which grew considerably between 1968 and 1974.
 16. See Lajo (1978b) on this point.
 17. See the statistics of consumption of meats in González Vigil, Parodi, and Tume (1980, 263).
 18. Amat y León and Curonisy (1979), Ferroni (1979), Grillo (1979), Grillo and Samaniego (1979), and Samaniego (1980).
 19. Samaniego (1980, 212) calculates that in 1972, 53 percent of caloric intake of the lowest income bracket in metropolitan Lima came from processed foods. The percentage may be slightly greater for the higher brackets.
 20. See an analysis in the trends of food consumption in the advanced capitalist countries in Caballero (1980a).
 21. Food dependency can be illustrated with some figures. In the low-income strata of metropolitan Lima (whose diet can be considered representative of the urban diet at the national level), 30 percent of the caloric intake in 1972 came from foods directly or indirectly imported (Samaniego 1980, 212). In 1975, 31 percent of commercial food demand of the country was covered by imports, while in 1965 only 18 percent was thus covered (calculated from table 3 of Lajo [1979], who used World Bank data for 1977). Lajo estimates that between 1965 and 1975, the import-consumption ratio went from 76 percent to 86 percent for wheat, from 0 percent to 52 percent for maize-sorghum, from 34 percent to 99 percent for oilseeds (excluding cotton), from 22 percent to 41 percent for dairy products, from 12 percent to 11 percent for red meats, and from 10 percent to 32 percent for barley (1978b, 37–38).
 22. See a discussion of the estimates in Maletta (1978c, 1979b) and Aramburú (1979).
 23. This figure refers to the economically active male population. The growth of the economically active female population is difficult to measure because of changes in the census definitions.
 24. See a detailed analysis and the figures of growth for each one of these items in Caballero (1981).
 25. This statement does not mean that 40.6 percent of the cultivated surface is worked with wage labor. The percentage of the latter ought to be considerably less because the units that use hired labor do not necessarily use it to work all their land or to perform all the tasks.
 26. Although these percentages refer to the overall Peruvian rural area, the families from the two lowest strata are mainly highland peasants.
 27. This figure comes out of the work of González (1980, 46) and of those discussed in Caballero (1981). In the communities studied by Figueroa, the situation is the opposite: more products are consumed at home, which probably reflects the particularly “traditional” character of these communities.
 28. On these questions, see Caballero (1981), Figueroa (1981), Fonseca (1973), Fonseca and Mayer (1976), Golte (1980), Mayer (1974), and Scott (1974).
 29. For example, see the articles contained in Alberti and Mayer (1974) and the analysis of Long and Roberts (1978).
 30. On this theme, see Figueroa (1981), Laite (1981), and Caballero (1981).
 31. Aramburú (1979), Lajo (1978b), Montoya (1977, 1978, 1980), Quijano (1979), Sánchez (1978).

32. On the ecological, institutional, and political barriers to the expansion of capitalism in the peasant areas, see Caballero (1980b).

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