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# AGRICULTURE AND GOVERNMENTS IN AN INTERDEPENDENT WORLD

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*What are the Prospects for Land Reform?*

INTRODUCTION

Land reform gives poor people ownership rights or permanent cultivation rights to specific parcels of land. It makes sense when it increases their income, consumption or wealth. And it fails if their consumption does not increase – or is reduced.

The Zamindari Abolition Act for Eastern India and the postwar land reforms in Iran, Japan, and China are outstanding examples of successful land reforms. China's creation of family farms from collectives – under the Responsibility System in 1978 – and the Philippines' tenancy reform in 1972 are other examples of successful land reforms. Neither provided ownership rights to the farmers or tenants. But they did provide permanent cultivation rights and by fixing ceilings on rents they gave farmers a portion of the land rent. Under both these reforms agricultural productivity started to grow faster. Between 1978 and 1984 output in Chinese agriculture increased by 61 per cent (Macmillan, 1988). Otsuka's study (1988) of the impact of the 1962 Philippines Land Reform Code and its implementation in 1973 concludes that the reform has successfully broken up large ownership holdings. The result has been greater social equity and higher agricultural productivity as tenants adopted the modern seed technology.

Another success is Kenya's Land Settlement programme in the 1960s. With funding from the British soon after independence, the government bought large estates from white farmers, subdivided the land into small farms, and redistributed them to the African farmers. Incomes and productivity shot up almost immediately.

By contrast, Algeria's nationalization of French estates in 1964 created large co-operative farms that gave few direct incentives to workers. The State retained ownership of the land and appointed managers to run the farms. It paid co-operative members what amounted to a wage, giving them neither ownership nor cultivation rights. Consequently, the real rate of growth in agriculture fell from 1 per cent a year in the 1960s to 0.2 per cent in the period 1969/71 to 1978/80 (Cleaver, 1982).

Today, in recognition of this failure, the Algerian government is reforming the state farm sector. Under its 1987 land reforms, the government dismantled the state farms – which had about 60 per cent of the country's agricultural potential – and replaced them with about 25,000 newly formed collectives. These new

\*Agricultural Operations Division, The World Bank.

collectives give permanent and inheritable cultivation rights to groups and individual households. But the sudden switch in policy has yet to convince farmers of the permanency of their new land rights. And the lack of government guarantees in the law may mean that investments and the maintenance of land improvements will remain suboptimal.

## WHY DOES LAND REFORM MAKE ECONOMIC SENSE?

If efficient small farms replace inefficient large farms, there is a benefit. But if smaller farms are not as efficient, there is a loss. Berry and Cline (1979) have shown that in many countries productivity is higher on small farms than larger farms (Table 1, is drawn from their calculation).

Many question, however, whether these findings really mean that transfers of land from large to small farms increase output. Some critics have tried to show that the observed differences in efficiency disappear when differences in land quality are accounted for, arguing that larger farms often are on poorer quality land. Bhalla (1987) used the Indian Fertilizer Demand Survey to try to eliminate the land quality differences statistically. He found that when soil quality variables are introduced, the inverse relationship declines for almost all the states. This decline is observed for both the magnitude, and the significance of the coefficient for LLAND. Kutcher and Scandizzo's (1981) similar work in Northeast Brazil shows that productivity differences between large and small farms do decline, but that they do not disappear. Even after adjusting for the proportion of farmland used for crops and for land value, they still came up with declines in productivity with respect to farm size, with an average elasticity of  $-0.69$  (excluding the Humid South East where sugarcane and cocoa plantations skew productivity in most large farms (p. 84)).

### *Why small farms are more efficient than large farms*

Binswanger and Rosenzweig's theoretical study (1986) shows that the main reason for the lower productivity of large farms is that they use more hired labour than do smaller family farms. And family workers are cheaper and more efficient than hired workers.

There are three explanations. First, family members receive a share of profits and therefore have more incentive than hired wage workers to work for given supervision. Second, there are no hiring and search costs for family labour. And third, unlike hired labour each family member takes a share of the risk.

The diseconomies of scale associated with hired labour can be partly circumvented by rental markets for land. Over the course of history, most large land owners have realized that family labour is cheaper than hired labour. So, rather than manage hired labour, they rent their land to tenants, taking advantage of the lower cost of family labour. Even if the optimum farm operation is small, the size of land holdings can be large since it is fairly simple to subdivide and rent out smaller holdings.

The subdivision of the Southern US plantations after the Civil War into small

TABLE 1 *Farm-size productivity differences, selected countries*

Farm size <sup>a</sup>	Northeast Brazil <sup>b</sup>	Punjab, Pakistan <sup>c</sup>	Muda, Malaysia <sup>d</sup>
Small farm (hectares) (10.0–49.9)	563	274 (5.1–10.1)	148 (0.7–1.0)
Largest farm (hectares) (500+)	100 (20+)	100 (5.7–11.3)	100

*Notes:* <sup>a</sup>100 = largest farm size compared with second smallest farm size. Second smallest farm size used in calculations to avoid abnormal productivity results often recorded for the smallest plots.  
<sup>b</sup>Table 4–1. Northeastern Brazil, 1973; Production per Unit of Available Land Resource, by Farm Size Group, p. 46. Index taken using average gross receipts/areas for size group 2 (small) and 6 (large), averaged for all zones excluding zone F, where sugarcane and cocoa plantations skew productivity average for large farms.  
<sup>c</sup>Table 4–29. Relative Land Productivity by Farm Size: Agricultural Census and FABS Survey-based Estimates Compared, (1968–9) p. 84. Index taken using value added per cultivated acre for second smallest size group and largest.  
<sup>d</sup>Table 4–48. Factor Productivity of Muda River Farms by Size, Double Croppers, 1972–3 p. 117. Index taken from value added in agriculture/relong (0.283 ha = 1 relong).

*Source:* Berry and Cline (1979).

tenant farms illustrates this point. Once cheap slave labour was unavailable the Southern farmers soon found that output and incomes rose if they subdivided and rented out holdings. Similarly, the Zamindars in Eastern India and the landlords in China, Japan and Iran all developed closely supervised, subdivided holdings that they rented out. The systems allowed the landowners to circumvent the higher labour cost of large farming operations and take advantage of cheap family labour.

Tenancy has its own incentive problems because sharecroppers do not receive their marginal product. But here, too, landlords have ways to structure their contracts with tenants to circumvent or minimize these problems. The landlords might share in the cost of fertilizers and seeds, tightly supervise the operations of farms, and provide the tenant with credit to use better levels of inputs. Although these ways of restructuring contracts can reduce the incentive problems, they cannot overcome them. Shaban's article (1987) shows that in six South Indian villages, inputs and outputs per acre are higher on the owned plots of a mixed sharecropper than on fully sharecropped plots. The percentage difference ranges between 19 and 55 per cent for inputs and is 33 per cent for output. These differences may be upper-bounds, because mixed sharecroppers have the opportunity to divert inputs from the sharecropped plots to their own plots. Hayami and Otsuka's review (1985) finds that the difference between plots of pure sharecroppers and pure owner-operators are smaller. The upshot of the long debate is that tenants are less efficient than owners, but not as much as expected.

Where large landlords have used whole farm tenants on a large scale and constituted a hated class of absentee owners, land reform has succeeded. Land reforms in Iran, Japan, Taiwan (China) and under the Zamindari Abolition Act in India were a simple transfer of the land to the former tenant. The reforms owe their success to the fact that the farmers knew the land, had draft animals, family labour, implements and farm management skills. Today, there are almost no such large-scale opportunities left.

Collective farms suffer from the same labour disincentives as hired labour. These effects are often aggravated by an ideological reluctance to use piece rates and other output-based payment systems. In addition, households in collectives have to take savings and investment decisions jointly – an extremely difficult task if there are wide differences in preferences for consumption over time. The size of these disincentives can be enormous. A large proportion of Soviet agricultural output is produced not by the state and collective farms but by plots allocated to individuals. Comparing productivity on collectively and privately farmed plots is complicated because the product mix differs and land quality may not be the same. Moreover, inputs may be diverted from collectively managed plots to private plots. Nevertheless the productivity differences are so large as to be noteworthy. Private household plots in the USSR, held by 23 million families (Shamelev, 1982), account for only 3 per cent of the total sown area but they produce more than 25 per cent of gross agricultural output. These private plots produce more than 30 per cent of the country's total meat and milk and around 60 per cent of the fruit and vegetables (Johnson and Brooks, 1983). In China, following the introduction of the Household Responsibility System, agricultural output rose by 61 per cent between 1978 and 1984. Data on post 1978 Chinese

agricultural performance suggest that just over three quarters of the measured productivity increase is due to change in individual incentives and the remainder to price increases to farmers (MacMillan, Whalley, Jing Zhu, 1988).

There are many cases where decollectivization could substantially increase productivity as it did in China, for example, in the Ethiopian State farms, the Soviet Union, some Eastern European Systems, and Vietnam. The problems of resettlement or of financing a reform do not arise in centrally planned states since the governments own the land, the farmers are present and it is a simple matter of redistributing the land to members of the collectives.

### *Mechanization and productivity*

Karl Marx and his followers believed that, as in manufacturing, the economies of scale associated with agricultural mechanization were so large as to make the family farm obsolete. True, lumpy inputs such as draft animals or tractors give rise to initial economies of scale of operational holdings – that is, the average costs decrease as the size of the holdings increase. And technical change implies that larger tractors and machines operate at lower unit costs, so optimum operational farm sizes will increase. So, does mechanization make very small *ownership* holdings obsolete? No. Small owners can rent out their land rather than sell it – and still keep the advantages of owning the land to raise credit (Binswanger and Rosenzweig, 1986). Again, tenancy makes the ownership distribution partly independent of the operational distribution. So the initial economy of scale associated with machines does not imply that reverse land reform is needed in areas with many small ownership holdings. Moreover, rental markets for machines can circumvent the economies of scale inherent in machines – but only partly. In the late nineteenth century, mechanical threshers in European agriculture were too large for most individual farms. Since threshing can be done at any time of the year, the machines would rotate between farms during the winter months, threshing the individual farm's output. Similarly, today's expansion of threshers in developing countries reflects a well developed, efficient rental threshing market. Tractors are widely rented out to small farms in Asia, Africa and Latin America, for ploughing; but the markets are not as problem free as for threshers (IBRD, 1984). Rental markets often are not feasible for time-bound operations, such as seeding in dry climates or harvesting where climatic risks are high. Farmers compete for first service and prefer to own their own machines.

Rental markets for machines figure prominently in recent decollectivization efforts. In China, the Responsibility System has generated very small farms. Some households specialize in renting out machines to these. The system assumes that rental markets for equipment can completely overcome the economies of scale inherent in large equipment. That may be over-optimistic and some farms seem to be growing in size. Conversely, in Algeria the 1987 land reforms reduced farm sizes from 1000 to 80 hectares per farm. The government hoped that these 80 hectare farms were large enough to use fully a complete set of machinery. However, Krafft, Rodgers, and Rooney (1988) suggest that without rental markets, the small farms cannot use the machines to full capacity since they are

generally suited to the larger farms. They predict that the increased pressure for a rental market may lead to some households or collectives switching out of farming to specialize in machine rentals.

As Hanumantha Rao (1977) showed, the negative farm-size productivity relationship between small and large farms initially disappeared with the introduction of tractors in Northwest India. But once the size of operational holdings adjusted upwards, small farms re-emerged with higher productivity rates than large farms. Economies of scale for machines increase minimum efficient farm sizes but by less than expected, because of rental markets.

### *Modern technology, management, and farm size*

Management, like a machine, is an indivisible and lumpy input. So the need for management initially gives rise to economies of scale: the better the manager, the larger the optimal farm size. The argument goes like this: modern fertilizers and pesticides require modern management skills. So does the raising of finance for the modern inputs and the marketing of high quality produce. Therefore optimal farm sizes will tend to increase with technical change. But too much can be made of this. Some management skills can be rented. If technology becomes too complex, farmers can hire private extension officers to advise them by the hour or the day. The T and V system of agricultural extension has been a very successful way of reaching and advising small farmers on new technology (Feder and Slade, 1984). Another solution to the management problem is contract farming, where large firms provide technical advice, finance and marketing services to small farmers.

Once again, however, rental markets for management and alternative contractual arrangements can circumvent the lumpiness of management skills only partially; actual farming decisions and the supervision of labour cannot be bought in a market. Managers have to do these tasks themselves. Nor is there any substitution for the important plot-specific experience of the farmer or manager. So minimal *operational* farm sizes may rise over time with the introduction of machines or other technology.

### *Can one redistribute plantations?*

We have just discussed why small farms are more efficient than large farms. Then why are there plantations – large operational farms – using permanent or semi-permanent hired workers rather than family labour? The explanation is that for certain crops economies of scale in processing and marketing are transmitted to the farm via the necessity of tight co-ordination between harvesting and processing.

Consider the co-ordination between harvesting and processing. For products that are easily stored in raw form, such as wheat or rice, a large mill can simply buy the grain at harvest time in the open market and store it for milling throughout the year. This shows that economies of scale in processing alone are not a sufficient condition for plantations – explaining why plantations or contract



farming for wheat and other foodgrains have never survived. But, in contrast with wheat, the harvesting and processing of sugarcane must be well co-ordinated. If cut cane is left unprocessed for more than 12 hours, the sugar is lost to fermentation. So the manager must carefully stagger the planting and harvesting to keep the sugar factory operating throughout a large part of the year. Some of the cane must be planted at sub-optimal times of the year when farmers would be unwilling to do so without compensation. To get around this problem sugar factories run their own plantations, using a single manager who decides on the tradeoffs between the costs of growing cane and of processing it.

The co-ordination problems of growing and processing bananas for export are an extreme example. Mature bananas must be put into a cold boat within 24 hours of their harvest to arrest further ripening. This represents an immense challenge for the plantation and the shipping company. The co-ordination is possible if the planter operates a large enough number of plantations in a given area to ensure that a boat will be filled and if he can be sure that a boat will arrive when the bananas mature. So, some of the world's largest owner operations are banana companies whose holdings include dozens of plantations operated by hired managers. Local banana markets, by contrast, can be served by trucks or rail. These markets are usually served by small owner operators.

Contract farming can, depending on the crop, substitute for the plantation. For sugarcane, contracting with small farmers is widespread throughout India, Thailand and elsewhere. For bananas, however, the quality controls are so rigorous that contract farming is less feasible. Hayami *et al.* (1987) has proposed redistributing the Philippines banana plantations to smallholders, who would then produce under contract. Hayami's proposal is to create farms of perhaps 20 to 30 hectares, but this farm size would preclude distribution of land to the poor. Holdings of five to six hectares which would result from redistribution to poor workers are too small to meet the demands of tightly scheduled contracts. In Central America, when legislation prevented the multinationals from owning large plantations, the major banana companies increased their supplies from contract farms. But these farms typically have hundreds of hectares and their contracts are so tight that they are virtually managed by the multinationals. For this reason, Hayami's proposal of splitting the banana plantations into small operational holdings would be unlikely to lead to an internationally competitive banana industry.

## MAJOR REMAINING OPPORTUNITIES FOR LAND REFORM

Most of the large ownership holdings operated by tenants have disappeared or been reformed – in India, Iran, China, to name a few. Left are the agricultural systems that are difficult to reform for political and economic reasons. Where large farms of 30–40 hectares are interspersed with medium and smaller farms – as in India and other parts of South Asia – large farms are owner-operated and are difficult to reform. The same is true of collective farm systems in the Soviet Union, Eastern Europe, Vietnam, and Ethiopia. As we just described, land in plantations cannot easily be redistributed without efficiency losses.

This narrows the opportunities for reform to the large-scale farms in Brazil,

Nicaragua, Guatemala and other Latin America countries, and in Zimbabwe and South Africa. During colonial times, landowners in these countries ousted the native populations from much of the most fertile areas and into generally infertile mountain or dryland areas. As late as 1964 in Zimbabwe, less than 6000 white farmers consolidated their occupation of nearly half the land, and it was the best land, leaving 3 million Africans on the other half of poor quality land. Despite attempts since 1979 to reform and resettle the African farmers, the situation remains largely unchanged. The sizes of the large estates in these countries exceed that justified by the economies of scale of machines or management skills. Farm size productivity differences are often huge between these estates and smallholders providing strong economic justification for land reform.

However, land reform in these countries would require resettlement, which brings problems. First, the resettled people have to acquire capital and farming skills appropriate for the new area. This differs sharply from simply giving the land to existing tenants. Second, the settlers may not be compatible ethnically. For example, tribal frictions in Zimbabwe grew after Ndebele were moved into Shona regions. Third, new settlements of this kind require costly infrastructure and support services. Some of these problems could have been avoided. Large Latin American farms used to be operated with tenants, hired labour, or the peculiar combination of the two, the Hacienda. Under the Hacienda system, wage earning labourers were given small plots of land for their own cultivation. But in the last 30 years, tenants and workers have been driven off these holdings (de Janvry and Sadoulet, 1986). Ironically, they have been driven off by well-meaning but perverse reforms – tenancy and labour law reforms.

In Brazil, for example, the 1964 Estatuta da Terra imposed ceilings on fixed rents, limits on the share of output that an owner could obtain from the tenant, and provisions giving security to long-term tenants, leading to a practical loss of ownership. In addition, labour laws made it illegal for workers to receive payments in kind. Under such circumstances, any rational owner would try to evict tenants and long-term workers.

Alternatively, owners might try to sell their land, but subsidies for mechanization and for credit have provided impressive ‘gifts’ to large farmers. The government’s policy mix has encouraged large farmers to mechanize or convert to ranching and to shed labour and tenants, systematically destroying the poor’s opportunities for employment or self employment.

## HOW TO PAY FOR LAND TRANSFERS

Despite the difficulties of reforming these remaining systems of large farms, the economic benefits would probably be large. The question then remains, if small farms are so much more efficient, why do small, poor farmers not buy land from large farms? The main reason is that even under ideal circumstances, they cannot buy that land without curtailing their consumption – because they have no equity.

*Distortions make it infeasible for the poor to buy land in the land market*

Given a perfect market situation, the value of land reflects the present value of agricultural profits, capitalized at the opportunity cost of capital. If the poor have to use credit to buy land at its present value, the only income stream they have available for consumption is the imputed value of family labour. They must use the remaining profits to pay for the loan. If the poor can get the same wage in the labour market, they are not any better off as landowners than they would be as workers. This example is, moreover, an ideal situation where the interest rate paid by the poor is equal to the interest rate that the most creditworthy borrowers can get. The poor generally have to pay higher interest rates and therefore have to reduce consumption below what they could have earned in the labour market.

If, in a less ideal situation, the value of the land exceeds the capitalized agricultural profits, the poor must cut consumption below the imputed value of family labour to pay for the land. Anything that drives the land price above the capitalized value of the agricultural income stream thus makes it impossible for the poor to buy land without reducing consumption.

In most real world situations, several other income streams are capitalized into the land price. First, with populations growing and the demand for land increasing, some of the expected future real appreciation of the land price is capitalized into the current land price. The only way a poor person could have access to that income stream is by selling off a small parcel of land every year to pay for his interest cost. This is clearly unfeasible for small landholders.

Second, where land ownership becomes attractive as a hedge against inflation, an inflation premium is built into the real land price as is clearly shown by Brandão and Rezende (1988) for Brazil and by Just and Miranowski (1988) for the United States.

Third, tax breaks are often capitalized in the land price. Most countries exempt agricultural income from income tax, and even where there is no general exemption, depreciation allowances are so generous that nobody with agricultural incomes pays any income tax on it. But since the poor have a zero tax rate anyway, they receive no such benefit from the income tax break. So they have no income to pay for the portion of the land price corresponding to capitalized tax breaks.

Fourth, large landowners have a cost advantage in securing credit, even in the absence of credit subsidies, and these credit cost advantages are capitalized into land values as well (Binswanger and Rosenzweig, 1986). Official credit systems often allocate the bulk of credit to large farmers, further increasing this credit cost advantage. Brandão and Rezende (1988) demonstrate econometrically how these credit subsidies are capitalized into land prices.

In sum, real future appreciation, inflation premium, income tax exemptions, and credit cost advantages of large ownership holdings raise the land price far beyond the capitalized value of agricultural profits. Agricultural economists know this problem well. When they try to compute the overall rate of return of capital invested in agriculture, they usually find that the opportunity cost of capital exceeds the rate of return in agriculture. In Switzerland the ratio is 5:1. And according to every farm management study in India, agriculture is unprofitable when measured at the opportunity cost of capital. Given this situation, the

productivity advantage of the small farmers would have to be immense to enable the assetless poor to finance land purchases out of agricultural profits. So, a land market generally cannot substitute for a land reform.

### *Making a land reform stick*

If governments introduce a land reform into a distorted environment that favours large farms, one would expect the recipients – small farmers – to sell out to the large farmers, defeating the purposes of a land reform. Because such distortions as income tax exemptions or credit distortions favour the rich, a precondition for a land reform is the prior elimination of all distortions favouring large farms. For example, to institute a land reform under the current policy regime in Brazil would be foolhardy. Tough policy choices eliminating explicit and implicit subsidies to large farmers must be made in order for a land reform to stick.

### *Progressive land taxes and the land market*

With a progressive land tax, the price of land in large ownership holdings would drop. Could governments impose a large enough land tax to reduce land prices to a level that the poor can afford? Questions like these are common. The World Bank has toyed with the idea in Zimbabwe. Hayami has explicitly proposed a land tax as the main avenue for a Philippine land reform. And Brazil actually has a progressive land tax in place.

In principle, governments can impose a large enough land tax to offset any nonagricultural premium on land prices in large farms. But this is unlikely to benefit the truly poor, because they still need some equity capital to buy the land. Even under the best of circumstances, a progressive land tax would redistribute land from the rich to the middle class. And circumstances are seldom the best because governments have used land taxes to try to raise agricultural productivity, cutting the tax rate for large farms that use land intensively or are very productive. In Brazil, farmers can cut their land tax rate in half by converting idle land or land under forestry into pasture. And with modest crop production, they can cut their land tax almost to zero. So, all the Brazilian system does is provide an additional incentive to ranching or extensive crop production.<sup>1</sup> It does not increase the number of land sales from large farmers to small farmers.

### *Having beneficiaries pay for a land reform*

If governments cannot use the voluntary land market to reform the size of land holding, can one make the beneficiaries of compulsory reform pay? Here again the typical proposal is for the Philippines and Brazil. The state buys the land and compensates the owners at market prices with land reform bonds instead of cash. It services the interest and principal payments, which it then recovers from the beneficiaries. Sometimes, private agencies, like the Guatemala Rural Development Foundation, execute such programmes of land redistribution. The private

agency buys large estates, subdivides them and sells the plots to settlers. Of course, if the land price contains any premium reflecting nonagricultural income streams, the beneficiaries of these schemes will not be able to pay.

If such schemes are implemented in the face of these problems, there are three likely outcomes. First, the beneficiaries default and the programme stops. Many ambitious land reform plans simply peter out, as has been common in Latin American countries. Second, bonds may have built-in features that erode their real value over time. So, although landowners receive their nominal value, time erodes the real market value and the government makes no compensation for this loss. Most landowners naturally oppose such thinly disguised expropriation. Third, governments may fail to repay loans from foreign lenders, making the programmes effectively funded by a grant.

Since the beneficiaries of a land reform cannot pay for their land, the land purchases must be financed either by foreign grants, internal tax revenues or inflationary monetary expansion, or by a combination of the three. The grants provide the equity that the poor lack. Credit to beneficiaries can play a supplementary, but only a minor role.

Because the poor cannot pay for land reform, we believe that the outlook for land reform is very bleak. Landowners will oppose any form of open or disguised expropriation, foreign grants will not materialize and governments will not allocate domestic resources for the purpose.

## OTHER WAYS TO INCREASE THE OPPORTUNITIES FOR THE POOR IN AGRICULTURE

Most governments have tried to improve the tenancy of poor share-croppers by legislation, but these attempts have largely had perverse results. First, owners have many ways of getting around the legislation – for example, by reducing plot sizes allocated to each tenant or by reducing credit, fertilizer and other inputs they provide to the tenant. Second, if owners cannot circumvent the laws, they expel tenants and revert to self-cultivation. As discussed earlier, the impact of many of these tenancy reforms has reduced the welfare of tenants.

If land reform cannot be financed and tenancy reform leads to perverse results, other policies and programmes must be pursued to assist the landless poor and small farmers. Far from being new, they are the standard fare of small farmer development programmes, and they have enjoyed much success. They continue to be valid, and they should be pursued.

First, governments should reform the policies that favour large farmers and that lead to large land premiums over the capitalized value of agriculture profits. They should also eliminate income tax exemptions for agriculture and subsidized credit for large farmers.

Second, governments should eliminate explicit and implicit subsidies to machines. As an example, the 1986 US Tax Reform Act lengthened the recovery rates on such depreciable assets as agricultural machinery from five to seven years and repealed the investment tax credit for farmers.

Third, governments should undo perverse tenancy reforms and perverse labour laws, allowing people to rent out their land again or make more intensive

use of labour. Hayami's proposal for the newly planned reforms in the Philippines calls explicitly for the abolition of all constraints on tenancy. In Latin America, the abolition of such constraints would greatly benefit self-employment in agriculture.

Fourth, governments should redistribute the land they already own, but with some reasonable ceilings on the size of holdings. In the Brazilian Amazon, squatters can obtain up to 3000 hectares of land if they clear trees from half of it. This accelerates deforestation and drastically reduces the land available to smallholders. A more sensible policy would be a land ceiling of 50 to 100 hectares. A good example of a successful redistribution scheme, using a smaller land allocation, was the US Homestead Act, which opened the Mid-West to settlers in the nineteenth century.

Fifth, efforts should be made to give smallholders adequate titles. Even if their claims to the land are secure, they cannot compete for official credit without titles. Gershon Feder's study of land titling in Thailand (1988) shows how large the disadvantages can be for small farmers lacking deeds of ownership. The recent land reforms in Algeria have not given firm guarantees of land tenure to the new farmers, so the farmers there will continue to have difficulty in raising loans from banks.

Sixth, special efforts should be devoted to programmes that assist small farmers. Very popular in the 1970s, these projects are still an integral part of the World Bank's poverty alleviation strategy. Such schemes as area development programmes, the T and V extension programmes, and the large dairy projects along the lines of the Anand Dairy Cooperative have done much to help small farmers. Despite these successes, discussion in recent years has often focused on failed small farm projects. These occurred where general economic policies were stacked against the farm sector, or where the project design was excessively complex for the implementation capacity of the agricultural services. In Sub-Saharan Africa, many projects have also focused on zones with very little agroclimatic potential and where no new high pay-off technology exists. So the failures do not put in question the small farmer development programmes, but rather provide lessons of how better to design them.

## CONCLUSION

Land reform is unlikely to be a major tool for improving the welfare of the poor developing countries. Even where it would make a lot of economic sense, it will not happen because the beneficiaries cannot pay for the land reform, implying the need for confiscating appropriations or large tax costs, neither of which is politically palatable. So other measures have to be devised to improve poor people's access to land or increase their income from agriculture. But these measures can help small farmers only if governments abandon policies that favour large farms and that put premiums on land prices. A much stronger commitment from governments and agencies is thus needed to tackle these policy issues and thereby reduce incentives to accumulate large ownership holdings, increase agricultural production and assure greater equity employment and self-employment in agriculture.

## NOTE

<sup>1</sup>This is part of the measures which de Janvry and Sadoulet (1986) describe as part of the state's strategy to force large farmers to modernize as an alternative to land reform. Other elements of the strategy are the credit subsidies discussed earlier in this paper.

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## DISCUSSION OPENING – YUJIRO HAYAMI

I agree with Binswanger and Elgin on the basic characteristics of agriculture in developing economies: (i) general absence of scale economies; (ii) largely efficient resource allocation under share tenancy; and (iii) the tendency of the market price of farm land to become higher than the capitalized value of agricultural profit due to future appreciation, income tax exemptions and credit cost advantage. One factual disagreement is on the possibility of reorganizing large plantations into a system of contract farming by which agribusiness processing and marketing firms contract out the farm production process to small growers. I do not want to elaborate on this in detail. It suffices to point out that the results of our field investigations in Mindanao, Philippines, show that contract farming is a viable mode, even for banana production for export, for which the co-ordination of farm production with the shipment schedule is most difficult (Hayami, Adriano and Quisumbing, 1988). In fact, no significant difference was observed in the yield of export-quality banana per hectare between large plantations and small contract growers for Stanfilco (the local arm of Dole).

I also agree on 'positive policies' for poverty alleviation and income equalization in the rural sector, such as elimination of tax exemptions for agriculture and of subsidized credit and inputs, and redistribution of public land to the landless.

My major disagreement with Binswanger and Elgin is on the basic design of land reform programmes. Their design is the traditional one to rely on government discretion and bureaucratic control for the enforcement of complex laws and regulations, as evident from their statement, 'land reform must be financed either by expropriation, or by foreign grants, or from government revenue'. Ample evidence has already accumulated to leave us in no doubt that the expropriation of lands at less-than-market prices would not only meet often insuperable resistance from landlords at the legislation level but also would be negated at the implementation level by their evasion efforts as well as rent-seeking activities by the political elite and the bureaucracy, especially in the absence of a basic infrastructure such as a relatively clean bureaucracy with high administrative capacity, accurate records on land ownership and tenure relationships, and effective countervailing organizations on the side of the landless.

It is highly doubtful if external funding to the extent that can result in significant poverty alleviation will ever come. Even if it did, the identification of beneficiaries and the channelling of land (or funds for land purchase) to them would require heavy bureaucratic machinery and control, especially if the programme is to cover plantations for which the actual tillers of the land are difficult to determine. Moreover, if a large external fund is expended for land purchase, the resulting increases in demand for land will push up land prices, severely reduce the effectiveness of the available funds and thereby make the programme self-defeating.



When the source of failure of past land reform programmes based on government direct control and discretion is recognized, it is logical to search for new programmes designed to induce, rather than to coerce, agrarian change. More specifically, it would be more effective to establish a mechanism to provide incentives for landlords to distribute their lands to landless tenants and labourers than for the government to purchase land directly and sell it to the landless. For this consideration, I have suggested the following components to serve for the core of the new programme design (Hayami, Quisumbing and Adriano, 1987; Hayami, Adriano and Quisumbing, 1988):

- 1 The imposition of a ceiling on the area of land owned, irrespective of tenurial status and commodity produced, while giving freedom to landlords to sell land in excess of the ceiling to anyone under any terms or conditions within a certain transition period;
- 2 The institution of a progressive land tax as a mechanism for inducing large landlords to sell their land to small farmers and the landless;
- 3 The removal of all regulations on land rental contracts in order to encourage landowners to rent out land to landless workers;
- 4 The institution of a progressive land rent for the lease of public land as a mechanism of inducing multinational and local agribusiness firms to reorganize their plantation system into a system of contract farming with small growers.

With the above programme design, there is little danger that existing scale economies of modern plantations will be disrupted. If plantations and ranches based on wholly-owned land would find it profitable to maintain the present form of organizations, the deregulation of land rental contracts would permit them to lease back land in excess of the retention limit. Likewise, plantations leasing public land have the option of either continuing the present system by paying a progressive land rent to the government, thereby remaining profitable so long as the assumed scale economies exist, or developing contract farming arrangements with small independent growers.

It is admitted that, under our suggested framework, much of the land owned by large landlords will be purchased by the rural middle class rather than by the landless. However, the landless will have the chance to ascend the 'agricultural ladder' from landless workers to share tenants, to leaseholders and further to owner-cultivators. The likelihood of their ascending the ladder will be increased by government programmes aimed at redistributing public land with the support of technical guidance, credit, marketing and infrastructure. The increased revenue from the progressive land tax on private land and the progressive land rent for public land lease will provide a basis for financing such settlement programmes as well as a special long-term credit programme to reduce the cost of acquiring land for the poor. Possible increases in land prices due to the credit programme will be counteracted by both the land retention limit and the progressive land tax which have the effect of increasing land supply from large landholders.

Through such a process, the agrarian structure of developing economies will gradually shift from the presently bifurcated system (where, on the one hand, landless agricultural labourers crave for lands, and on the other, landed elites monopolize wealth and power) to a unimodal structure where the middle class is dominant and in which even the landless labourers have a chance to ascend. The

process of transformation will certainly be a long and arduous one. However, if no reform action is taken or if too drastic reform measures based on ideological preconceptions are attempted, class conflicts will intensify and the route to the unimodal rural society will be closed.

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