

A/D/C and Muda Agricultural Development Authority

SEMINAR ON FARM MECHANIZATION IN SOUTHEAST ASIA

Penang and Alor Star, Malaysia

November 27 - December 2, 1972

CB:IBRD FARM MECHANIZATION CREDIT PROGRAM: PHILIPPINES

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INTRODUCTION

Unlike many modern factors employed in agriculture, such as fertilizer and improved seeds, mechanization in its many forms represents a highly indivisible input. It is this lumpiness in investments for modern agricultural equipment which has given rise to much of the controversy pertaining to the effects of mechanization on the distribution of income and employment.^{1/} These arguments contend that scale economies embodied in mechanical technologies result in ownership and use patterns heavily biased in favor of larger farms endowed with preferential access to productive resources, including financing for the acquisition of machinery. This hypothesis is an empirically testable problem, although it requires data which is not always available. It is further contended that both the rate and patterns of mechanization are influenced by a number of economic variables over which policy makers and planners have varying degrees of control. Tariffs, exchange controls, labor legislation and credit policies all have a direct impact on relative factor prices and the resulting

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^{1/} Carl Gotsch, "Technical Change and the Distribution of Income in Rural Areas." American Journal of Agricultural Economics, LIV, 2 (May 1972), pp. 326-341.

resource allocation. More subtle, but equally important, are policies which effect the direction and level of indigenous research on the design and development of agricultural machinery.

While many of these factors are examined briefly, the focus of this paper is the role of credit in promoting the use of mechanization in Philippine agriculture. Specifically, we are concerned with the impact that credit programs funded by the International Bank for Reconstruction and Development and administered by the Central Bank of the Philippines have had on the rate and pattern of growth in mechanization over the past several years.

RURAL CREDIT SYSTEMS

The rural banking system was established with the assistance and encouragement of the government to provide a national network of small credit institutions operated in the rural areas. To place credit facilities within easy reach of small farmers, the rural banks coordinate with other government agencies serving agriculture in providing technical assistance on problems of farm management and proper use of credit. To help rural bank borrowers improve farm production, the rural banking system in 1965 launched a nationwide supervised credit system. Under this program, credit facilities were made available to eligible farmer borrowers on the basis of farm management plans and budgets developed jointly by the farmer, Central Bank and other government agricultural technicians. To expand credit resources, two lending schemes were established for the rural banks: the Agricultural Guarantee Loan Fund^{2/} and the CB:IBRD Farm Mechanization Credit Program.

^{2/} The funding was created by the Monetary Board for the purpose of encouraging the introduction of supervised credit in the agricultural lending of rural banks and setting up a Guarantee Fund to protect those rural banks participating in the program from losses they may incur under the program.

Emphasis on farm mechanization and the introduction of farmers to supervise credit began in 1965 when the Central Bank (CB) entered into an agreement with the International Bank for Reconstruction and Development (IBRD) for a credit line of \$5 million to finance medium and long-term loans for farm mechanization and irrigation. The IBRD funds were fully utilized by the first quarter of 1968 and in June 1969, an agreement for a second credit line was finalized. The second program called for the provision by the IBRD of funds totalling \$12.5 million, sufficient to provide the foreign exchange requirements for 2,163 diesel tractors (60 h.p.), 2,524 power tillers (8 h.p.), and 1,007 sets of irrigation pumps and engines in addition to short-term production loans.

Both programs were designed specifically to encourage mechanization on small farms, defined for this purpose as operational units of not less than 5 hectares or more than 50 hectares in size.^{3/} The following section summarizes briefly the conditions for which the loans were to be utilized:^{4/}

1. For the acquisition of farm machinery and implements:
 - a) Under single cropping conditions, four-wheel tractors are financed only when the farm area is 40 hectares or more, and under double cropping, this area may be reduced to about 25 hectares.

^{3/} A cursory examination of the distribution of farm size in the Philippines indicates that 18.7 per cent of all farms are found within this range. However, over 81.1 per cent of all farms fall below five hectares while 53.2 per cent fall between two and ten hectares.

^{4/} Central Bank of the Philippines: Department of Rural Banks Report, 1966.

- b) Under single cropping, hand tractors are financed for farms of 8 hectares or more and under double cropping, the size may be reduced to 5 hectares.
2. For the acquisition of farm implements for planting, mowing, harvesting, spraying, and dusting.
 3. For equipment and materials for livestock, poultry raising and fish culture.

The size of a loan granted to an applicant-borrower depends upon the actual cost of the object to be financed, the needs of the borrower, the collateral offered, and the borrower's repayment capacity and credit worthiness. Loans cannot exceed 70 per cent of the appraised value of immovable property offered as security which must constitute a first mortgage. The amount loaned by a rural bank to a borrower shall, in the case of a chattel mortgage or pledge, not exceed 50 per cent of the appraised value of the object to be financed or, where the object is new, 50 per cent of the price in the bill of sale. When the borrower provides additional security for the object to be financed, the amount of the loan may be increased to the full cost of the object. The rural bank shall, in all cases, provide not less than 10 per cent of the cost of the object to be financed.^{5/} The rural banks accept as collateral first mortgages on immovable property; chattel mortgages on movable property, including machinery, government bonds and securities fully supported by the Central Bank.

^{5/} This joint participation provision has been a limitation in the successful extension of the mechanization loan program to all rural banks. Many banks feel their funds can be more profitably employed in other forms of credit and investment. It appears that the IBRD favors removal of this requirement to ensure wider dispersal of loanable funds under the program.

On the basis of the object of financing, the borrower is required to liquidate his account within (a) 3 years for farm implements, (b) 4 years for light machinery, (c) 7 years for heavy machinery, (d) 5 years for irrigation pumps and engines, piggery and poultry, and (3) 10 years for investments in the complete development of an irrigation system or a fishpond culture.

The interest rate charged annually by the IBRD from the Central Bank Bank is 5 1/2 per cent. The Central Bank in turn charges the rural banks 6 1/2 per cent. Loans to end-user borrowers bear interest not exceeding 12 per cent annually on the principal and interest is not discounted in advance. Loans of ₱15,000 and below are processed in the rural banks. Loans above ₱15,000 are processed in the rural bank and, if the project is feasible, it is recommended for approval and forwarded to the Central Bank where a loan committee makes the final decision.

The following section will discuss the nature and rate of loan utilization in an effort to identify the pattern of growth of farm mechanization and relate this to government policies and economic occurrences during the same period. Finally, a regional perspective of end-user borrowers will review the extent and progress of the credit programs in the Philippines and the magnitude of the IBRD commitment to mechanization in the Asian area.

PATTERNS OF MECHANIZATION

In 1960, 74 per cent of all farm holdings in the country reported the use of animal power and 20 per cent reported the use of human power (Table 1). Only 0.2 per cent of all holdings reported the use of mechanical power, and 2.3 per cent a combination of human and mechanical power.

Census data^{6/} during the last decade seem to indicate an identification of mechanization with the adoption of tractors and power tillers.

In the early 1960's, tractor ownership in the country was found primarily in areas planted to sugarcane. The advent of the new, high-yielding rice varieties coupled with a series of economic factors, encouraged and enlarged the potential for increased production and mechanization of farm operations in the rice area.

A comparative summary of loan releases,^{7/} as shown in Tables 2 and 3, indicate that roughly 88 per cent of all loans granted under the CB:IBPD credit program were utilized for the purchase of farm equipment. The concentration of loans for the acquisition of four-wheel tractors and power tillers (hand tractors) suggests that mechanization in the form of machinery for land cultivation is remunerative.

Small farm size and the difficulties encountered in the maintenance of water buffalo make use of power tillers (hand tractors) particularly attractive for land preparation.^{8/} Here, the discussion relating to mechanization equipment is limited to tractors or power tillers used in the rice and sugar areas. These two sectors have been chosen because they are presently the primary areas of concentration in the use of agricultural machinery.

6/ Philippines (Republic) Bureau of the Census and Statistics. Census of the Philippines, 1960: Agriculture, Vol. II Summary Report. Manila, 1965.

7/ Monthly Report of the Department of Rural Banks, Central Bank of the Philippines on the CB:IBPD Financing Program. 1968-1971, (mimeo).

8/ Land preparation is traditionally handled by family labor and carabaos as contrasted to planting, harvesting and threshing which are carried out using principally hired labor.

The provision of credit for purchase of farm machinery and the expanded export program of sugar planters and millers to meet an enlarged U.S. sugar quota are two important factors which have enhanced farm machinery adoption. Early in the 1960's, when the U.S. quota for Philippine sugar was increased, tractor sales from 1962 to 1964 rose. During the first Rural Credit Project of the CB:IBRD, about 80 per cent of total funds were loaned to farmers for the purchase of over 2,000 tractors and power tillers and 270 irrigation pumps and engines. Table 4 shows that it was during the full operational years of the first credit program (1967-1968) that total sales of tractor and power tiller were highest. With few exceptions, the agricultural machinery used in the country must still be imported and embodies a high foreign exchange component. Foreign exchange receipts from the IBRD, as originally intended, cover almost exactly the foreign exchange costs of each type of equipment sold under the program. As an illustration, the average IBRD participation in a loan granted for the purchase of one 60 h.p. diesel wheel tractor with plow and harrow in 1967 was ₱14,814 or \$3,769; based on Central Bank statistics, the average CEF Manila value of the equivalent equipment was \$3652 in the same year. The peso portion of the loan is used to cover taxes and duties, assembly costs, warranty and service expenses, pre-delivery and delivery charges, and insurance and registration costs.

CREDIT UTILIZATION

In May 1968, \$4.9 million was withdrawn from the IBRD fund by some 2,400 farmer-borrowers. Of this amount, 66.3 per cent was spent for tractors and implements and 21.6 per cent for power tillers and attachments

(Table 2a). In 1967 alone, 560 tractors and 724 power tillers were purchased through the fund (Table 3). During the first program, the sale of power tillers rose substantially as more loans were granted for power tillers than four-wheel tractors. However, of the total amount disbursed, the value of tractors weighed more than that of power tillers.

The rate of utilization of the second credit line has not been as rapid as for the first. In 1969, the second line of \$12.5 million was implemented shortly before devaluation of the Philippine peso (Feb. 1970). In addition, the Central Bank as well as the rural banks found it difficult to fulfill the 10 per cent counterpart peso requirement. A subsequent rise in machinery prices and import restrictions discouraged purchases: loans for tractors and power tillers fell sharply and sales declined as shown in Chart 1. The evidence is not clear-cut as to the factors which effected the use of mechanization. As shown in Chart 2, the introduction of minimum wage legislation and a general increase in the price level during this period makes an assessment of causality extremely difficult.

As of March 1972, the total resources extended under the second credit line to 132 participating rural banks and 1,240 farmer-borrowers amounted to ₱18.3 million: the size of loans ranging from ₱4,000 to over ₱40,000 (Table 5). Loans for the purchase of farm tractors and accessories totalled ₱15.1 million or 82.1 per cent of total loan releases. About 9.5 per cent of ₱1.7 million were utilized for livestock development while ₱0.8 million or 4.4 per cent went for fisheries development. As a result, including technical services fees, only \$2.9 million have been drawn from the second \$12.5 million credit line which is to expire in March 1973.

Loan maturities under both programs range from 3 to 10 years. During the first program, 4-year and 7-year loans made up 88.6 per cent of the total number of loans. These were usually for light and heavy machinery purchases as loans for power tillers may be liquidated in four years and tractors in seven years. Under the second credit program, loans with maturities of seven years amounting to ₱12.3 or \$1.9 million represented more than 70 per cent of total releases, indicating that the major portion went for purchases of larger tractors.

A repayment schedule is drawn up by the farm technicians of the Central Bank and is based on an individual farm and home plan approved by the rural bank managers. In principle, the timing of payments is supposed to coincide with the marketing of the borrower's products. The method of collection by the rural bank is not clearly defined but in general the procedure is for the rural bank to send out reminders by mail or by contract.

The loan repayment patterns for 179 borrowers from 18 rural banks located in nine provinces who participated in the first credit program was studied in 1969.^{9/} Of these borrowers, 69.3 per cent were up-to-date in the payment of their loan amortizations and 7.3 per cent had paid in full; 13.9 per cent of the loans had not fallen due; and 9.5 per cent of the borrowers failed to pay their amortizations when the maturity date came. Thirteen per cent of the borrowers indicated that the date of the first amortization came too soon and that the loan period was too short. However, from the point of view of the Central Bank technicians, these borrowers were granted loans because of their projected ability to pay the first amortization.

^{9/} P. Ladrado, "The CB-IRPD Credit Program". (Paper presented at the Seminar on Economics of Rice Production in the Philippines at The International Rice Research Institute, Philippines, December 11-13, 1969).

As of March 1972, 70.6 per cent of rural bank gross releases under the first program remained as outstanding loans; 35.3 of these were loans past due (Table 2a). The highest monthly ratio of total funds collected to total amount disbursed was 16 per cent. For the second credit line, \$2.6 million of the total amount withdrawn from the IBRD are outstanding loans, 2.5 per cent being past due. A lower repayment ratio of about 10 per cent was reported in the second credit program.

The diffusion of loans granted through the CB-IBRD credit program is largely concentrated in the regions growing either rice or sugar. Again, the relation of rice and sugar crop area to tractor ownership is evident. A majority of the loans are distributed among the provinces of Luzon, Western Visayas, and Western Mindanao. Nearly 55 per cent of the total area devoted to rice and 23 per cent of total sugarcane are found in the Luzon region (Tables 6 and 7). Census data report that 36 per cent of tractors owned in the country are found there (Table 3). Similarly, Western Mindanao accounts for some 17 per cent of the total rice area and 19 per cent of total tractors owned in 1960. Western Visayas is firstly a sugarcane and second a rice area. Thirty-five per cent of tractors owned can be found in Western Visayas which accounts for 72 per cent of the total area for sugarcane.

One report describing a sample of four-wheel tractor buyers in 1967,¹ showed that sixty-five per cent are used on rice or rice and corn producing farms which are 50 hectares or less in size. Sixty-nine per cent of total operating time is spent in custom work with 60.5 per cent of the tractor owners renting out their tractors for custom plowing.

¹10/ Marketing Division, C.A. Machineries, Inc., Bulacan, Philippines.

While the CB:IBRD loan program may have been a strong single factor in the promotion of farm mechanization, loans have been granted selectively resulting in limited participation by small farmers. . Since all loans granted have been made on the basis of the collateral available rather than on the productivity of the investment, more than half of all loan applications are denied each year. The extension of medium and long-term benefited mostly farmer-owners; more small farmers may be encouraged to avail of the credit when the regulations are relaxed. The operation of the second credit program has been retarded to some degree by the financial condition of the rural banking system. In 1971, according to the Central Bank records, only 125 rural banks out of a total of 539 drew funds from the CB:IBRD agricultural credit line. To speed up the disbursement of these funds, the World Bank agreed to remove the 10 per cent equity participation of rural banks early this year. It also agreed to expand use of the line to include the financing of cargo trucks, tractor trailers, off-farm storage and refrigeration facilities. It has further allowed financing of machinery and other facilities needed by such additional crops as abaca, bananas, citrus, coconut and tobacco.^{11/}

Based on the requirements for reviving the second rural credit program and filling the normal agricultural machinery needs for the balance of the agricultural sector, it is estimated that more than 4,000 tractors and 5,000 irrigation equipment can be funded each year from the CB:IBRD project. Not included are unquantified benefits such as opening up of new farm areas, the demonstration effect of improved farm methods and the incremental value of other crops and livestock that can be grown.

^{11/} Domestic News, Central Bank News Digest, January 20, 1972.

IBRD REGIONAL FUNDING

In expanding its financing of agriculture, the IBRD has explicitly noted the recent advances in agricultural technology and recognizes the serious capital impediment to agriculture development. The Bank now devotes substantial sums to agriculture to provide finance for agricultural credit to farmers. Table 9 shows the Bank's commitment in Asia and the Middle East. An aggregate amount of \$389.4 million has been channeled into this region to support project loans for mechanization and related programs in agriculture. This fund is used specifically to finance small scale irrigation projects and farm equipment such as tractors, power tillers and irrigation pumps.

CONCLUSION

It is apparent from the evidence presented in preceding sections that the government's program to promote the growth of mechanization has had mixed results. During the period of the first IBRD loan, tractor and power tiller sales increased significantly, in large part due to the availability of financial resources at reasonable rates. There is little or no indication that the initial CB:IBPD loan unduly discriminated against smaller farmers as shown by the large number of power tillers sold to small farmers. The bulk of the loan did, however, go for the purchase of larger four-wheel tractors. The second loan program shows a definite bias in favor of larger farmers resulting principally from the tighter collateral requirements imposed on borrowers. These latter conditions, in combination with the devaluation of the peso in 1970, have resulted in a substantial decrease in the quantities of agricultural equipment sold. The increase in the domestic price of equipment and its consequential low rate of return,

plus the non-availability of suitable machinery produced domestically has seriously dampened the government's efforts to introduce mechanization.

Increasing concern with a long-run lack of potential employment opportunities in industry has given the government reason to re-examine its policy with regard to agricultural mechanization. Realization that agriculture must continue to provide an increased number of jobs for an expanding labor force adds a new dimension to arguments regarding the use of power and equipment in Philippine agriculture. Combined with considerations related to growth in output, equity, welfare and the distribution of income, the issue of employment has caused more serious attention to be focused on the types and patterns of mechanization which are compatible with overall policy objectives.

We feel that more research is needed to provide precise measures of the impact of mechanization on these objectives. Additionally, there are strong and compelling reasons to believe that exclusive reliance on imported equipment is unnecessary. For production of certain types of equipment, countries such as the Philippines are well endowed with the know-how and industrial capacity to produce its own requirements at a cost which is competitive with outside sources. Programs of this type also require capital and we would recommend strongly that the government consider use of specified resources available through agencies such as the IBPD for the design, development and indigenous production of agricultural machinery. For designs proven to be technically and economically viable, there are the complementary benefits of expanded income and employment opportunities in industry and agriculture with the added attraction of strengthened backward linkages between these two sectors.

It is difficult to measure the degree of success of the CB-IBRD farm mechanization program in promoting increased production and income in the rural areas. The results achieved by an agricultural credit system in promoting growth are heavily conditioned by other objectives of government policy such as equity in income distribution, levels of employment, economic security and the removal of exploitation. There must be an awareness of the need for balance between short-term credit for working expenses, medium-term credit for implements and improvements and long-term credit for total farm improvements. At the sector level government should weigh the need between the foregoing and credit for processing and marketing facilities. There may be little advantage in providing more credit for fixed capital if there is not enough short-term credit to meet operational expenses. Indeed, more fixed capital will often open up productive potentialities for the use of additional working capital.

To give credit on more equitable terms over different areas requires a well developed delivery system. It should be an objective of policy to extend facilities to all areas as this becomes economically and administratively possible. This has an important bearing on the structure of the credit system and the outcome of specific credit programs.

There is some reason to believe that the conditions under which mechanization loans were granted resulted in a degree of discrimination by farm size, location and tenure class with larger owner-operated farms located in the more productive rice and sugar growing areas receiving preference. We are not advocating a credit system wherein comparable treatment means identical treatment. There is no dispute with the fact that the cost

and risks of administering a large number of small loans is likely to be higher than for a comparable volume of credit given as large loans. It would be theoretically justifiable, but not necessarily expedient to differentiate loan preferences on the basis of banking costs. Means are being explored to reduce both the risks of non-payment and the costs of administering small-farmer loans. It is interesting that government services not chargeable directly to the credit system, such as agricultural extension or supervised credit, are likely to be more beneficial, or at least more necessary, to small producers. The quantities of different types of credit required for a specific purpose may be interdependent. There is little point in providing adequate, cheap credit for fixed capital if short-term operating credit is very expensive. Because various cost elements will differ for loans used for different purposes, rates should not necessarily be identical but differences should reflect the amount necessary to cover differences in management and risk. There are classes of farms or areas suffering special handicaps where farmers cannot meet charges or repay loans even when these are granted at the lowest practicable rates. It may be considered necessary, as a matter of public policy to assist these farmers by direct or indirect grants through cheaper investments or subsidized credit programs.

Table 1. Use and source of power on the holding, Philippines, 1960.

	Number (In thousands)	%
Total number of holdings	2,166.2	100.0
Number of holdings reporting the use of:		
Mechanical power	4.1	0.2
Animal power	1,606.0	74.0
Animal and mechanical power	60.4	2.8
Human power only	495.7	23.0

Source: Philippines (Republic) Bureau of the Census and Statistics. Census of the Philippines, 1960; Agriculture, Vol. II Summary Report. Manila, 1965.

Table 2. Number of CB:IBRD loan releases covering 1st and 2nd credit programs.

	1966		1967		1968		Aug/69-Dec/71	
	No.	%	No.	%	No.	%	No.	%
I. By category								
A. Farm development								
4-wheel tractor	72	27.8	560	34.4	255	45.0	455	45.0
Power tiller	125	48.7	724	45.4	228	38.8	185	18.3
Irrigation pump	24	9.3	186	11.4	50	10.2	126	12.5
Equipment for spraying	3	1.2	29	1.8	10	1.7	16	1.6
Storage and processing							41	4.1
Wells & dist. works							2	0.2
Cargo trucks & trailers								
B. Livestock development								
	34	13.0	134	8.2	25	4.3		
Poultry							56	5.5
Swine							67	6.6
C. Fisheries development								
Fishing boats							5	0.5
Fishponds							59	5.8
TOTAL	259	100	1629	100	588	100	1012	100
II. By maturity								
3 years	10	7.0	48	2.9	7	1.2	16	1.6
4 "	37	31.6	743	45.6	256	43.5	210	20.8
5 "	73	28.2	242	14.9	56	9.5	266	26.3
6 "							6	0.6
7 "	72	27.8	560	34.4	245	45.1	453	45.3
10 "	5	1.9	31	1.9	11	1.9	56	5.5
Not included	4	1.5	5	0.3	17	2.9		
TOTAL	259	100	1629	100	588	100	1012	100
III. By region								
Iuzon	170	65.6	1037	66.7	375	63.8	645	63.7
Visayas	59	22.8	302	18.5	91	15.5	212	21.0
Mindanao	30	11.6	290	14.8	122	20.8	155	15.3
TOTAL	259	100	1629	100	588	100	1012	100

Table 2a. Summary of the 1st CB:IBRD Credit Program
(April 1, 1966 - May 31, 1968)

	(Amount (P))	Percent
Released for 4-wheel tractors and implements	12,949,202.68	66.3%
Released for power tillers	4,218,744.75	21.6%
Released for irrigation and livestock development	<u>2,363,278.32</u>	<u>12.1%</u>
Total amount withdrawn from IBRD	19,531,225.76	100.0%
Loans outstanding; (March 31, 1972)	13,797,596.91	70.6%
Loans past due (March 31, 1972)	4,866,114.98	35.3%

Source: Department of Rural Banks, Progress Report on the
CB:IBRD Farm Mechanization Program, March 1972.
 Central Bank of the Philippines, Manila.

Table 3. Amount of CB:IBRD loan releases covering 1st and 2nd credit programs (in thousand pesos)

	1966		1967		1968		Aug/69-Dec/71	
	Amount	%	Amount	%	Amount	%	Amount	%
I. By category								
A. Farm development								
4-wheel tractor	1,831.8	81.9	11,298.0	86.7	4,576.5	93.9	9,157.5	69.2
Power tiller							915.6	6.9
Irrigation pump	91.2	4.1	708.0	5.4	131.3	2.7	496.6	3.8
Equipment for spraying	12.1	0.6	169.1	1.3	54.3	1.1	175.9	1.3
Storage & processing							554.7	4.2
Wells & dist. works							26.5	0.2
Garage trucks & trailers								
B. Livestock development								
Poultry	301.3	13.4	855.7	6.6	114.2	2.3	594.7	4.5
Swine farm							673.5	5.1
C. Fisheries development								
Fishing boats							59.1	0.4
Fishponds							574.3	4.3
TOTAL	2,236.4	100.0	13,030.8	100.0	4,876.3	100.0	13,228.4	100.0
II. By maturity								
3 years	33.7	1.5	169.4	1.3	4.0	0.1	96.2	0.7
4 years	331.7	14.8	2,952.0	22.7	794.8	16.3	1,108.3	8.4
5 years	700.4	31.3	1,277.0	9.8	117.1	2.4	2,052.2	15.5
6 years							56.0	0.4
7 years	1,086.1	48.6	8,300.6	63.7	3,823.0	78.4	9,346.6	70.7
10 years	61.0	2.7	273.6	2.1	73.2	1.5	569.1	4.3
Not indicated	23.5	1.1	52.2	0.4	63.4	1.3		
TOTAL	2,236.4	100.0	13,030.8	100.0	4,876.3	100.0	13,228.4	100.0
III. By region								
Luzon	1,599.7	71.5	8,719.8	66.9	2,893.4	59.3	8,875.2	67.1
Visayas	453.2	20.3	2,326.2	17.9	744.6	15.3	2,988.2	22.6
Mindanao	183.5	8.2	1,984.8	15.2	1,238.3	25.4	1,365.1	10.3
TOTAL	2,236.4	100.0	13,030.8	100.0	4,876.3	100.0	13,228.4	100.0

Table 4. Annual sales of power units and number of mechanization loans released under CB:IBRD credit program.

	Total imports Tractors	Total Sales Tractors	Inventory	Total sales Power Tillers	No. of loans released for	
					Tractors	Tillers
1960	297					
1961	102	813	(711)			
1962	262	994	(732)			
1963	513	863	55			
1964	859	950	(91)			
1965	769	607	162	1505		
1966	518	664	(146)	1932	72	126
1967	2203	1531	672	3058	560	724
1968	1443	1630	(187)	1873	265	228
1969	1390	1358	32	910	54	34
1970	982	978	4	475	150	42
1971	1065	1086	21	258 (Jan-May)	251	109

* Estimated cumulative total of power tillers sold between 1960-1965.

Source: Bureau of the Census and Statistics
Agricultural Machinery Dealers Association
Radiowealth, Inc.

Table 5. Withdrawals from IPRD loan account for quarter ended March 31, 1972 (in thousand pesos)
(2nd SB-IPRD Credit Program)

	Pawn Development	Livestock Development	Fisheries Development	Technical Services	Total
1. Total amount available	62,400.0	8,320.0	8,320.0	960.0	80,000.0
2. Total withdrawals at beginning of quarter	11,517.8	1,292.4	645.8	721.4	14,177.3
3. Withdrawals during quarter	3,534.4	451.8	167.6	-	4,153.8
4. Total withdrawals at end of quarter	15,052.2	1,744.2	813.4	721.4	18,331.1
5. Estimated balance available	47,347.8	6,575.8	7,506.6	238.6	61,668.9
6. Estimated commitments for next 12 months	22,000.0	3,000.0	2,000.0	-	27,000.0

Source: Central Bank of the Philippines, Department of Rural Banks.

Table 6. Area of farms, by type of farms, Philippines, 1969 (in thousand hectares).

	All crops	Raddy	Corn	Sugarcane	Coconut	Livestock	Poultry
Total, Philippines	7,772.3	3,112.1	949.3	249.4	1,938.6	414.5	13.8
Northern Luzon	705.7	493.8	59.6	0.1	2.7	41.1	2.3
Central Luzon	717.3	599.8	8.2	31.1	3.5	46.7	3.1
Southern Luzon	1,767.8	592.6	42.1	26.1	724.1	117.8	3.1
Eastern Visayas	959.1	212.7	154.5	11.6	392.6	16.9	6.8
Western Visayas	1,029.1	478.9	129.1	179.4	129.9	31.8	1.6
Northern Mindanao	891.9	208.8	167.1	0.4	274.9	52.2	1.3
Western & Southern Mindanao	1,701.4	525.5	389.7	0.7	410.9	108.0	1.6

Table 7. Percentage distribution of farm areas, by type of farms, Philippines, 1960.

Region	All crops %	Paddy %	Corn %	Sugar- cane %	Coconut %	Live- stock %	Poultry %
Total, Philippines	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Northern Luzon	9.1	15.9	6.2	0.1	0.1	9.9	16.6
Central Luzon	9.2	19.3	0.9	12.5	0.2	11.3	22.5
Southern Luzon	22.8	19.0	4.4	10.5	37.4	28.4	22.5
Eastern Visayas	12.3	6.8	16.3	4.6	20.2	4.1	5.8
Western Visayas	13.2	15.4	13.6	71.9	6.7	7.7	11.4
Northern Mindanao	11.5	6.7	17.6	0.1	14.2	12.6	9.6
Western & Southern Mindanao	21.9	16.9	41.0	0.3	21.2	26.0	11.6

Source: Philippines (Republic) Bureau of the Census and Statistics, Census of the Philippines, 1960; Agriculture, Vol. II Summary Report. Manila, 1965.

Table 8. Regional distribution of tractors, Philippines, 1960.

Region	Owned	%	Not owned	%
Total, Philippines	5,127	100.0	2,922	100.0
Northern Luzon	543	10.6	206	7.1
Central Luzon	704	13.7	1,194	40.3
Southern Luzon	600	11.7	334	11.4
Eastern Visayas	197	3.8	45	1.5
Western Visayas	1,782	34.8	612	20.9
Northern Mindanao	317	6.2	48	1.6
Western & Southern Mindanao	984	19.2	489	16.7

Source: Philippines (Republic) Bureau of the Census and Statistics, Census of the Philippines, 1960.

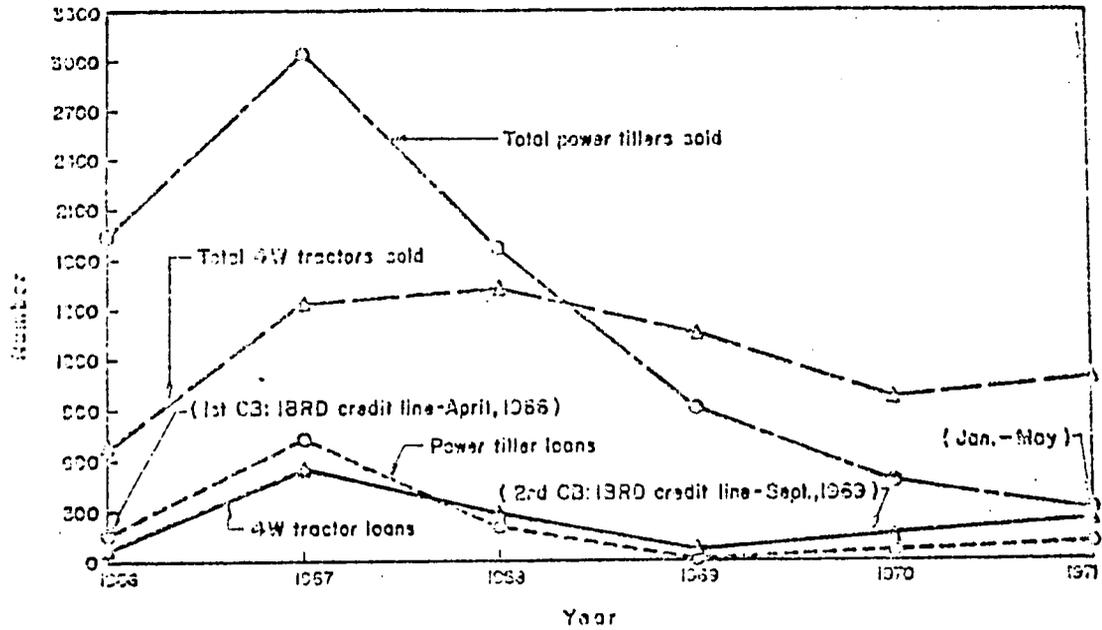


Chart 1. Annual sales of power units and number of mechanization loans released under CB: IBRD credit program, 1966-1971.
Source: Bureau of Census and Statistics; Agricultural Machinery Dealers Association; Radiowealth, Inc.

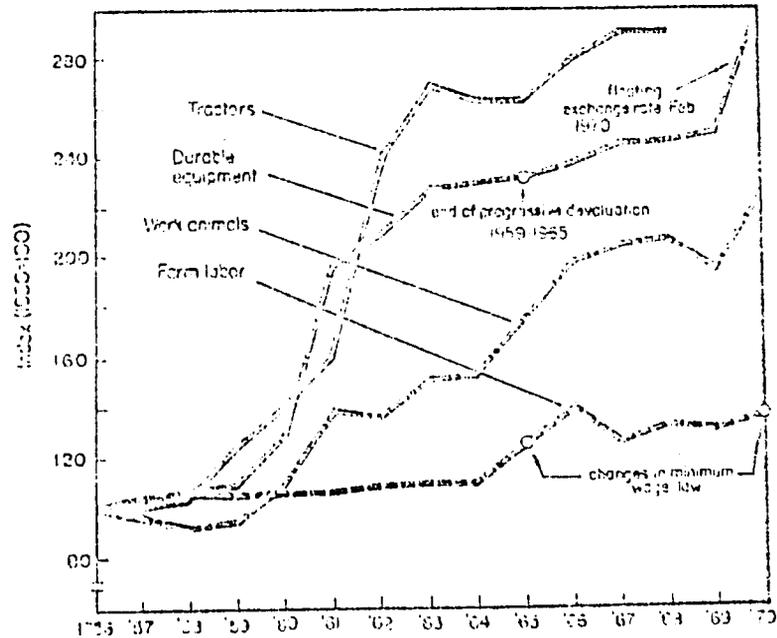


Chart 2. Price indices of tractors, durable equipment, work animals, and agricultural labor. †

†Based on data from Cristina M. Crisostomo, "Sources of output growth in the Philippine agriculture 1948-1968," M.A. Thesis, University of the Philippines, 1971 (forthcoming).