CREDIT INTERMEDIATION AS AFFECTED BY DIFFERENT FACTORS IN TWO RICE ECOSYSTEMS AT CENTRAL LUZON, PHILIPPINES: A COMPARATIVE ANALYSIS

AN SINGH BHANDARI

Submitted to the Faculty of the Institute of Graduate Studies, Central Luzon State University, Munoz, Nueva Ecija, Philippines, in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE
(Rural Development)

October 1990

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

BHANDARI, AN SINGH, Institute of Graduate Studies, Central Luzon State University, Munoz, Nueva Ecija, Philippines, October 1990. CREDIT INTERMEDIATION AS AFFECTED BY DIFFERENT FACTORS IN TWO RICE ECOSYSTEMS AT CENTRAL LUZON, PHILIPPINES: A COMPARATIVE ANALYSIS.

Adviser: Dr. Artemia L. Ferrer

This study asserts that there is a significant difference in irrigated (favorable) and rainfed (unfavorable) rice ecosystems due to the prevailing credit factors and intermediation of credit for rice farming activities which ultimately affected rice yield. This was attributed to some socio-economic, technological, infrastructural, natural calamity factors which influenced credit factors; and to some socio-economic and technological factors which influenced credit intermediation activities in rice farming.

Data were gathered from 240 (40%) borrower-farmer respondents from Sto. Cristo Norte and Tanejero with irrigated rice ecosystem and Mahipon and Calawitan with rainfed rice ecosystem in the provinces of Nueva Ecija and Bulacan. Frequency count, percentage, mean, standard deviation, linear correlation, chi-square, F-test and t-test were used to analyze the data.

The t-test results revealed significant differences in the two environments. The demand of the credit was significantly high and the utilization of the credit was also full in irrigated areas. The interest rate charged on the credit was significantly high in rainfed areas where credit requirements were also tough in comparison to irrigated areas.

The intermediation of credit for each of the rice farming activities like purchase of seeds, seedbed preparation, land preparation, transplanting, fertilizer application, plant protection, harvesting and threshing were also significantly high in irrigated rice ecosystem when compared thru t-tests.

The t-test results likewise indicated that the rice yield in wet and dry seasons was significantly higher in irrigated rice ecosystem.

The F-test showed that the economic status of the respondents in irrigated areas was much better than in rainfed areas.

The F-test further revealed that the input availability was hgiher in rainfed areas than in irrigated areas where a supply of more inputs is needed.

The availability of the rice mills when compared thru F-test showed that the availability and the proximity of the rice mills were favorable in irrigated rice ecosystem.

The F-test results also indicated that the occurrence of typhoons affected irrigated rice ecosystem more, whereas the occurrence of drought affected more the rainfed rice ecosystem.

The chi-square and the correlation tests reflected that the socio-economic characteristics and technological factors significantly affected credit borrowing behavior and intermediation of credit for specific rice farming activities in two rice ecosystems, especially in irrigated areas.

The presence of infrastructures (rice mills and warehouses) and the occurrence of the natural calamities (typhoons and droughts) also significantly affected credit factors both in irrigated and rainfed areas.

Credit factors like amount, source, demand, availability, interest rate, utilization and requirements had significant association with the intermediation activities in rice farming both in irrigated and rainfed areas except the source of the credit and the demand in rainfed areas which did not have effect on given intermediation activities.

Rice yield is influenced thru the intermediation of the credit for specific rice farming activities, particularly seedbed preparation in wet season and land preparation in dry season in irrigated rice ecosystem.

The significant problems encountered in irrigated areas in rice farming were low price of farm output, high cost of fertilizer and an inadequate water supply during dry season. In rainfed areas, high interest rate, occurrence of natural calamities, lack of water and prevalence of tungro virus disease were the primary problems.

Suggestions made were reduction of the cost of farm inputs and increase of the price of farm outputs in irrigated areas whereas the reduction of the interest rate or provision of subsidy by the government on interest rate and the building of irrigation system were the suggestions.

The study recommended policy implications to widen the irrigation facility, management of water by looking for alternate sources, minimizing the gap of input-output prices, regularization of reasonable interest rate even from informal sources, the conduct of programs to control rats and plant diseases like tungro virus, reinforcement of land reform and strengthening of crop insurance programs.

LITERATURE CITED

ADAMS, D. and G.I. NEHMAN. 1977. Borrowing cost for agricultural loans in low income countries. Unpublished paper, Department of Agricultural Economics, Ohio State University, October.

ADHIKARI, J. 1987. Farmers' decision-making on crop production: A case study of Begnas Village in Nepal. Masteral thesis in Rural and Regional Planning, Asian Institute of Technology, Bangkok, Thailand.

ADB. 1968. Developing small farm economy in Asia. Asian Agricultural Survey, ADB Manila (March 1968). p. 828.

BAILEY, G. F. 1964. Capital savings and credit in highland Orissa (India). In Raymond Firth and B.S. Jamey, Capital Savings and Credit in Peasant Societies, George Allen and Umurin, Ltd. London, 1964. pp. 112-113. As cited by Federico A. Cruz, UPLB. 1980

BARKER, R. and E. U. QUINTA. 1967. Farm Management studies for costs and returns in rice production. The Seminar-Workshop on the Economics of Rice Production. Paper presented at a Conference in IRRI, December 8-9.

_____, S. H. LIAO and S. K. DE DATTA. 1968. Economic analysis of rice production from experimental results to farmer fields. Paper presented at Agronomy Department Seminar, UPCA, August 9.

BAKER, L. B. and V. K. BHARGAVA. 1974. Financing small farm development in India. Indian Journal of Agricultural Economics, August 1974. pp. 101-118.

BARKER, R. and M. MANGAHAS. 1971. The impact of new technology on labor use in rice production. Progress Report on Cooperative Study Undertaken by the University of the Philippines School of Economics and the International Rice Research Institute in cooperation with the Organization for Economic Cooperation and Development.

BARKER, R. and V. E. QUINTA. 1967. Farm management studies of costs and returns in rice production. The Seminar-Workshop on the Economics of Rice Production (Paper presented at a Conference at the International Rice Research Institute), December 8-9.

BAZLUL, A. M. 1981. An economic analysis of the factors affecting the adoption of modern varieties of rice in some selected sites of Bangladesh. Masteral thesis in Agricultural Economics, UPLB, Philippines.

BEST, B. A. 1981. Socio-economic causes for low repayment rates of non-collateral institutional rice loans in the Philippines. Unpublished masteral thesis in Agricultural Economics, UPLB, Philippines.

BRADY, N.C. 1981. Fundamentals of rice crop science (Excerpts) by Shouichi Yoshida International Rice Research Institute, Los Banos, Laguna, Philippines.

BULACAN C. 1970. Final Report. Vol. I. Bureau of Census and Statistics, Manila, Philippines.

CADA, E.L. and B.P. ESCUNDO. 1972. Rice varietal improvement in the Philippines in International Rice Research Institute, Los Banos, Laguna, Philippines.

CAMPBELL, D. T. and J. C. STANLEY. 1966. Experimental and quasi-experimental designs for research. Ranc McNally College Publishing Company. Chicago.

CASTILLO, E.T. 1974. Marketing and financing tie-up and its relations to loan repayment. A Cade Study of NEIRIP Loan Program. Masteral thesis, UPLB, Philippines.

CENTRAL BANK OF THE PHILIPPINES. 1983. Financing agriculture and rural development for improve rural income and equity. Paper and Proceedings of the 29th Annual Convention of the Philippine Agriculture Economics and Development Association (PAEDA). Gregorio Licaros Auditorium, Central Bank of the Philippines, Manila, June.

CHANDLER, R. F., JR. 1968. Dwarf-rice - a giant in Asia. In Yearbook of Agriculture. United States Department of Agriculture.

CORALES, I. C. 1983. Credit situation in the rural communities (Preliminary Report). Financing agriculture and rural development for improved rural income and equity. Paper and Proceedings of the 29th Annual Convention of the Philippines Agricultural Economics and Development Association (PAEDA). Gregorio Licaros Auditorium, Central Bank of the Philippines, Manila, June.

_____ and C. E. CUEVAS. 1977. Costs of agricultural credit in the Philippines: The short-run effects of interest rate deregulation. Preliminary Version. Working Paper Series No. 87-02, March.

CRISOSTOMO, C., W. MEYERS, T. PARIS, B. DUFF, and R. BARKER. 1971. The new rice technology and labor absorption in the Philippine agriculture. Malayan Economic Review. 16(2):117-158.

CRUZ, A. F. 1980. Credit absorptive capacity of rice farmers. MS Thesis, UPLB, Philippines.

DAVID, C. C., V. G. CORDOVA and K. OTSUKA. 1989. Modern rice technology and income distribution in favorable and unfavorable environments: The Philippine Case. IRRI Ag. Econ/Sat Sem CDD et./18 February.

DAVID, C. 1979. Structure and performance of rural financial markets in the Philippines. In economics and sociology. Occasional Paper No. 589. The Ohio University, Columbus, Ohio, U.S.A.

DE DATTA, S. K. 1981. Principles and practices of rice production. International Rice Research Institute. A Wiley Interscience Publication, John Wiley and Sons,

_____. 1970. The environment of rice production in tropical Asia. University of the Philippines College of Agriculture in cooperation with the International Rice Research Institute. Rice Production Manual. Los Banos, Philippines. pp. 53-65.

DELA CRUZ, A. T. 1987. Input, demand, output supply, and efficiency of rice farmers in Nueva Ecija. MS thesis in Agr. Econ. UP Diliman, Philippines.

DUFF, B. 1976. Mechanization and the modern technology. Resource Paper No. 6. In Conference on the Economic Consequences of the New Rice Technology, December, IRRI, Los Banos, Laguna, Philippines.

ENCARNACION, J. JR., R. S. MARIANO and R. M. BAUTISTA. 1971. A macro-economic model of the Philippines, 1950-1969. Discussion Paper No. 71-11 (Revised) June 22, 1971, University of the Philippines, Los Banos, Laguna, Philippines.

ESTRELLA, C. F. 1978. Tenant emancipation in the Philippines. Public Information Division. Ministry of Agrarian Reform, Quezon City, Metro Manila.

FALCON, W. P. 1970. The green revolution: generations of problems. American Journal of Agricultural Economics, 52(5):698-712.

FAO. 1986. Statistical development series I, Food and Agricultural Organization, Rome.

___. 1987. Processed statistical series I. 1948-1985. World Crop and Livestock Statistics. Food and Agriculture Organization of the United Nations, Rome.

___. 1965. Agricultural credit through cooperatives and other institutions. Food and Agricultural Organization of the United Nations, Rome.

FERGUSON, G. A. 1981. Statistical Analysis in Psychology and Education. Fifth Edition. New York: McGraw-Hill Book Company.

FERRER, A. L. 1987. Rice technology and the development of credit relationship in the village of Maragol. Workshop on Differential Impact of Modern Rice Technology on Favorable and Unfavorable Production Environments, 1st, IRRI, Philippines.

FLORO, S. L. 1987. Technical change and the informal credit market in Philippine agriculture. In Paper prepared for the first workshop on the differential impact of technical change between favorable and unfavorable areas. March 23-25, IRRI, Philippines.

GAITSKELL, A. 1964. Agricutlrual credit. Paper presented in a Seminar. In Agricultural Division of Economic Development Institute, IRBD, Washington, D.C. As cited by Federico A. Cruz, UPLB, 1980.

GAPUD, J. P. 1969. Financing low rice farming in selected barrios of Munoz, Nueva Ecija. Economic Research Journal. p. 79. As cited by Sacay.

GRIFFIN, K. 1972. Economic aspects of technical change in the rural areas of moonsoon Asia. United Nations Research Institute of Social Development, January, Geneva.

HALPERN, J. M. 1964. Capital, savings and credit among Lao peasants. In Raymond Firth and B. S. Yamey, Capital, Savings and Credit in Peasant Societies. London: George Allen and Umurin, Ltd. pp. 82-103. As cited by Federico A. Cruz, UPLB.

HILL, F. T. 1970. Developing agriculture institutions in agriculture sciences for the developing nations, Washington, D.C.: American Association for Advancement of Science. pp. 155-158.

IRRI. 1988. Policies and priorities.towards 2000 and beyond. International Rice Research Institute. Los Banos, Laguna, Philippines.

_____. 1977. International Rice Research Institute Annual Report for 1976. Los Banos, Laguna, Philippines.

JOHNSON, V. W. and E. C. JOHNSON. 1966. The development of improved credit institutions for farmers. In Raymond E. Borton (Ed), Getting Agriculture Moving. 2:952.

KARIM, M. A. 1976. Profile and loan repayment behaviour of small rice farmer-members of Samahang Nayon in Laguna province. Unpublished Ph.D. Dissertation, UPLB, Philippines.

LAURENTO, A. S. 1980. Economic impact of irrigation in Bukidnon. Masteral thesis in Agricultural Economics. UPLB, Laguna, Philippines.

LEDESMA, A. J. 1982. Landless workers and rice farmers: Peasant subclasses under agrarian reform in two Philippine villages. International Rice Research Institute, Los Banos, Laguna, Philippines.

MARZAN, E. G., JR. 1978. The effect of land reform on landlords. MS thesis in Agricultural Economics. UPLB, Philippines.

ODIUM, E. P. 1971. Fundamentals of Ecology. Third Edition. Washington: W.B. Saunders Company.

OCHANG, T. and S. E. ONG. 1972. Meeting rural credit needs: Bigger role for credit institution in developing processes and planning to encourage the exchange of materials useful in teaching of course related to agricultural development in Asia A/D/C Teaching Form No. 14, ADC Inc., March. Thailand.

OCTAVIO, G. G. 1977. Loan repayment and technical assistance among Masagana 99 farmers in Bulacan 1974-75. MS thesis, UPLB, Laguna, Philippines.

ORDEN, E. M. 1989. Labor allocation pattern among landless worke households in favorable and unfavorable rice production environments. MS thesis in Agricultural Economic. UPLB, Philippines.

OPENFIELD, H. V. et al. 1970. Farm Management land use and tenancy in the Philippines Central Experiment No. 1. August, pp. 48-49.

PAGOSO, C. M., G. GARCIA and C. R. G. DE LEON. 1979. Fundamental Statistics for College Students. Greenhills, Manila: Sinagtala Publishers, Inc.

PARIS, T. R. 1981. Determinants of selected rainfed rice-based cropping systems in the Philippines. MS thesis in Agricultural Economics, UPLB, Philippines.

PASCUAL, N. P. 1976. Socio-economic profile of the rural areas of Eastern Visayas region. PCARRD Funded Research. p. 42.

POUDYAL, R. 1989. Some determinants of the informal credit on rice production - distribution patterns among rice farmers in two Philippine villages. Masteral thesis in Rural Development, CLSU, Munoz, Nueva Ecija, Philippines,

PINAYO, G. C. 1983. Citizen participation and the delivery of health services. Doctoral dissertation, UP Manila, Philippines.

RUTTAN, V. N. 1964. Productivity models of economic growth. IRRI, AE-64-3. Revised. October 1.

SACAY, O. T. 1971. Paper presented for spring review of small farmer credit sponsored by United States Agency for International Development, Manila, Phil.

_____. 1966. The role of credit in the marketing of food and agricultural products, 1st national seminar on agricultural marketing, UN-FAO and Bureau of Plant Industry, Philippine Goverment, Manila.

_____. 1961. An analysis of the crop loan program of the agricultural credit and cooperative financing administration, Unpublished Ph.D. dissertation, Cornell University, U.S.A.

SANDOVAL, P. R. and B. V. GRON. 1971. Agricultiral land reform in the Philippines: Economic aspects, Dept. of Agr'l. Economics. College of Agriculture, Univ. of the Philippines, P. 35.

SEN, SUDHIR. 1974. A richer harvest new horizons for developing countries. Orbis Books-Maryknoll, New York, Tata McGraw-Hill Publishing Co. New Delhi, India.

SEN, L. K. 1974. Seminar on the role of irrigation in the development of India's agriculture, Banglore. Paper No. 11, IRRI, Los Banos, Philippines.

SHAHI, R. B. 1988. Assessment of cropping pattern technology in rice-based farming system. Masteral thesis in Rural Development, Central Luzon State University, Munoz, Nueva Ecija, Philippines.

TABLANTE, N. B. 1965. The agricultural credit problems in the Philippines. The Philippine Agriculturist. 49(6-7):6-7. November-December.

_____. 1974. Farm Management and Credit Guidance as a Tool for Achieving Successful Well-balanced System of Farming Economics. IOwa, U.S.A.: The Iowa University Press.

TAYLOR, D. C. 1976. Financial policies in asian gravity flow irrigation with an Indonesia Case Study application. Paper prepared for the Water Resources Branch, Center for National Resources, Energy and Transportation, U.N.

TIMSINA, D. 1989. Involvement of rural women in rice farming as influenced by selected factors: A comparative study of an irrigated and rainfed Philippine villages. Masteral thesis in Rural Development, CLSU, Munoz, Nueva Ecija, Philippines.

WEISBLAT, M. A. and P. R. SANDOVAL. 1967. Rice production institutional factors and economic incentives. The Seminar-Workshop on the Economics of Rice Production, In paper presented at a Conference at the International Rice Research Institute, December 9-9. pp. 7-9.

YADAV, S. N. 1989. Determinants of borrowing in rural financial markets: The case from Nepal. Masteral thesis in Agricultural Economics, UPLB, Philippines.