

INVOLVEMENT OF RURAL WOMEN IN RICE FARMING AS INFLUENCED
BY SELECTED FACTORS: A COMPARATIVE STUDY OF AN
IRRIGATED AND A RAINFED PHILIPPINE VILLAGES

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ABSTRACT

TIMSINA, DIBYA., Institute of Graduate Studies, Central Luzon State University, Munoz, Nueva Ecija, Philippines, September 1989. INVOLVEMENT OF RURAL WOMEN IN RICE FARMING AS INFLUENCED BY SELECTED FACTORS: A COMPARATIVE STUDY OF AN IRRIGATED AND A RAINFED PHILIPPINE VILLAGES.

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This study sought to determine rural women's extent of involvement in decision making and physical participation in different rice farming activities under two varying environments.

This research was conducted in two villages of the municipality of Guimba, Nueva Ecija, Philippines. One of the villages is irrigated (Kawayang Bugtong) and the other is rainfed (Bacayao). A total of 124 women respondents were selected, representing 20 percent of the total farming households in each village. They were interviewed using a pre-tested interview schedule.

Majority of the respondents were about 41 years old and the level of their education was relatively low in both villages. The mean household size of the respondents was 6.7 and 6.2, respectively in the irrigated and the rainfed areas. Mean farming experience was 19 years in the irrigated area and 17.8 years in the rainfed area. Family and non-

family (exchanged and hired) labors were used in rice production activities in both villages. The family provided the main source of labor in the rainfed area while non-family labor was used slightly higher in the irrigated area. On the whole, women's labor participation was higher in the rainfed area (39% of the total mandays) than in the irrigated area (37.5% of the total mandays).

Most of the respondents had a farm size of less than 2 ha in both villages. The total household income was slightly higher in the rainfed area. Rice was the main source of total income in both villages. Majority of the households in the two villages were leaseholders.

Women in both villages had good access to credit which was mostly obtained from private money lenders. They were also accessible to labor in both villages. Exchanged laborers, however, were more available in the irrigated area whereas hired laborers were available in both areas. Some of the improved technologies that were available and used in both irrigated and rainfed areas were improved seeds, chemicals, fertilizers, insecticides, and machineries .

Rural women, regardless of the ecological environments, participated in almost all of the physical and decision making activities related to rice farming. Those activities encompassed seed selection, pulling and bundling of seedlings, transplanting, replanting, fertilizer and herbicide application, weeding, harvesting, threshing and

other post harvest activities. The extent of women's participation, however, was greater in the irrigated area. In the irrigated environment, the factors that significantly affected rural women's involvement in decision making were their farming experience, beliefs and tenurial status. Also belief was significantly related with their physical labor. On the other hand, land type affected decision making as well as labor participation of women in the rainfed area. Moreover, accessibility to credit and labor were found to be significantly related to decision making and physical labor in some rice farming activities in both areas.

LITERATURE CITED

- ABBOT, S. 1975. Women's importance for Kenyan rural development. *Community Development Journal*. 10(3):179.
- ABDULLAH, T. 1983. Women in rice farming system in Bangladesh and new technology programs can reach them. *In* Women in Rice Farming. Proceedings of a conference on women in rice farming system, 26-30 Sept. 1983. IRRI, Los Banos, Laguna, Philippines.
- ACHARYA, M. and L. BENNETT. 1981. The rural women of Nepal: An aggregate analysis and summary of eight villages. Vol. 4, part 9. CEDA, Nepal, pp. 306.
- AGRAWAL, B. 1983. Rural women and high yielding variety rice technology in India. *In* Women in Rice Farming. Proceeding of a conference on Women in Rice Farming System, 26-30 September, 1983.
- ANCHETA, R.R. 1981. The Filipino women in rice farming. Paper presented at the workshop on women's participation in paddy production and processing. Oct. 21 to Nov. 6, 1981, Malaysia.
- BATTAD, F.A. 1973. Factors associated with the adoption of rice technology in Cotabato. Unpublished Ph.D. dissertation, UPLB, Laguna, Philippines.
- BOSERUP, E. 1970. Females roles in economic development. London St. Mains Press.
- CARDOVA, V.G. 1979. New Rice Technology its effects on labor use and shares in rice production in Laguna, Philippines, IRRI, Los Banos.
- CASTILLO, G.T. and J.F. PUA. 1963. Research notes on the contemporary Filipino family: Findings in a Tagalog Area. UPLB, 1963, pp. 38-39.
- CASTILLO, G.T. 1976. The Filipino women as Manpower: the Image and the Empirical Reality, UPLB, Philippines.
- CASTILLO, G.T. 1977. Beyond Manila: Philippine Rural Problems in Perspective, IDRC, Ottawa, Ontario, Canada, p. 107.

- CASTILLO, E.R. 1979. Participation and training needs of rural improvement club members in selected municipalities in Ilocos Sur. An unpublished M.S. Thesis, UPLB, Philippines, pp. 82.
- CHENQUEN, L., FANG, R.Y., XU, X.B. 1983. Half-sky role of China's women in rice farming systems. In Women in Rice Farming proceedings of a conference on women in rice farming systems. 26-30 Sept. 1983. IRRI, Los Banos, Philippines.
- DADLANI, M. and D.V. SESHU. 1988. Seed management: Relevant technologies for women. Paper presented at the Women in Rice Farming Systems training and planning workshop. 2-11 May, 1988. IRRI, Los Banos, Philippines.
- DE DATTA, S.K.. 1981. Principle and practices of rice production. A wiley - Interscience publication.
- DEDATTA, S.K., F.V. GARCIA, W.P. ABILAY, JR., J.M. ALCANTARA, A. MANDAC and V.P. MARCIANO. 1979. Constraints to high rice yields, Nueva Ecija, Philippines. In Farm-level Constraints to High Rice Yield in Asia. 1974-77, IRRI, Los Banos, Philippines.
- DEVI A. L..1987. Rural Women Management in Farm and Home. Published by Northern Book Center, New Delhi, INDIA.
- DEY, J. 1983. Women in African rice farming systems. In Women in Rice Farming. Proceedings of a conference on Women in Rice Farming Systems, 26-30 Sept. 1983. IRRI, Los Banos, Philippines.
- DEY, J. 1985. The concept and organization of a research network on women in rice farming systems. In Report of the Project Design Workshop on Women in Rice Farming Systems. 10-13 Apr. 1985. IRRI, Los Banos, Philippines.
- DEY, J. 1985. Country profile on Bangladesh. In Report of the Project Design Workshop on Women in Rice Farming Systems. 10-13 Apr. 1985. IRRI, Los Banos, Philippines.
- DEY, J. 1985. Country profile on the Philippines. In Report of the Project Design Workshop on Women in Rice Farming Systems. 10-13 Apr. 1985. IRRI, Los Banos, Philippines.

- DELAINE, B. and J. RUGERINGANGRE. 1988. Methodology for data collection in a farming systems research approach in Burundi-Africa Central. Paper presented in the farming system research/ extension symposium. 9-12 Oct. 1988. Fayetteville. Arkansas, USA.
- DIXON, R.B. 1978. rural women and work. John Hopkins University press for resources for the future, Baltimore USA.
- DULYAPACH, P. and A. CHATCHAVAL. 1984. Country study in training of women extension workers in Thailand. Report prepared for the workshop on training on women extension workers, CIRDAP.
- EBRON, L.Z., G. CASTILLO, and P.M. KAISER. 1983. "Changes in harvesting, threshing arrangement and landless laborers". The consequences of small rice farm mechanization of project. Working paper No. 90, IRRI, Los Banos, Laguna, Philippines.
- ESCALADA, M.M. and S.S. BINONGO. 1988. Women in root crop technology. In Filipino Women in Rice Farming Systems. Paper presented at the consultative workshop on women in rice farming systems in the Philippines. 26 March 1987. UPLB, Los Banos, Philippines.
- FERRER, A. 1986. The new agricultural technology and the development of rent capitalism in a rice farming village. CLSU Scientific Journal. June-Oct. 1986.
- GASCON, FE B. 1989. Women's Technical Knowledge and their Participation in Rice Farming. Unpublished M.S. thesis, UPLB, Laguna, Philippines.
- GASCON, R. 1980. Role of farm women in England. World Agricultural Economics and Rural Sociology. 23(12). pp. 167.
- GONZALES, L.A. and R.A. GUINO. 1981. The role of women in paddy production: Selected area in the Philippines. Paper presented at the workshop on the role of women in paddy production and processing. 21-28 Oct. 1981. Malaysia.
- ILLO, J.F. 1983. Wives at work: Patterns of labor force participation in two rice farming villages in the Philippines. In Women in rice farming. Proceedings of a conference on women in rice farming systems. 26-30 Sept. 1983. IRRI, Los Banos, Philippines.

- IRRI, 1988. World Rice Statistics 1987, IRRI, Los Banos, Philippines
- JONES, R.L. AND S.K. JONES. 1976. The Himalayan Women. Meyfield, Polo Alto.
- JOSHI, C. 1980. Country review and analysis the roles and participation of women in agriculture and rural development. Ministry of Home Pachayat. HMG, Nepal. pp. 19.
- KADA, R. and Y. KADA. 1983. The changing role of women in Japanese agriculture: The impact of new rice technology on women's employment. In Women in Rice Farming. Proceedings of a conference on women in rice farming systems. 26-30 Sept. 1983. IRRI, Los Banos, Philippines.
- KARIM, N.H., K. BANU, M.A. NAHEK and A. KABIR. 1988. Women's participation in rice farming systems in Bangladesh. Paper presented at the workshop on women in rice farming systems training and planning. 2-11 May 1988. IRRI, Los Banos, Philippines.
- KHAN, JAHN ARA. 1983. Participation of Rural Women in Community Activities and income generating projects. Ph.D. dissertation, UPLB, Laguna, Philippines.
- KHUSH, C.S. 1983. Improved rice varieties in retrospect and prospect. In Women in Rice Farming. Proceedings of a conference on women in rice farming systems. IRRI, Los Banos, Philippines.
- MARANAN, C.G. 1987. Agronomic profile of Bacayao, Guimba, Nueva Ecija research site. Paper presented at the annual cropping systems seminar workshop, April 20-21, Tarlac, Philippines.
- MASSOD, FARZANA. 1988. Women in Traditional Irrigated Farming Systems. Paper presented in the WIFRS, May 2-11, IRRI, Los Banos, Laguna Philippines.
- MENCHER, J.P. 1983. Landless women agricultural laborer in India. In Women in Rice Farming. Proceedings of a conference on women in rice farming systems. 26-30 Sept. 1983. IRRI, Los Banos, Laguna, Philippines.
- MICKELWART, D. et al. 1973. A seven country survey report on the roles of women in rural development. Report prepared for AID. Colorado Westview Press.

- MIES, M. 1984. Indian women in subsistence and agricultural labor. World employment program research working paper. ILO, Geneva.
- OHKI, REIKO. 1983. Women's Labor and the Technological Development of Rice Cultivation in Japan. Proceeding of a conference on Women in Rice Farming Systems, IRRI 26-30 September, 1983.
- PAPANEK, H. 1976. Women in cities: Problems and prospectives. In Tinker F. and M. Bramser (eds.). Women and World Development. Overseas Development Council, Washington D.C. pp. 416.
- PARIS, 1986. Women in a crop-livestock farming systems project in Sta. Barbara, Pangasinan, Philippines. Paper presented for the conference on Gender Issues in Farming System Research and Extension. Univ. of Florida, Gainesville, Florida, USA. 26 Feb - March 2.
- PARIS, T. 1988. Women in rice farming systems: A preliminary report of an action research program in Sta. Barbara, Pangasinan. In Filipino women in rice farming systems. Consultative workshop on women in rice farming systems in the Philippines. UPLB, Los Banos, Philippines.
- PARIS, THELMA, B. DUFF and B. SHINAWATRA. 1988. Diversifying income opportunity and increasing the productivity of rural women in rice farming system. Agricultural Economic Department Paper No. 88-29, IRRI, Los Banos, Philippines.
- PRADHAN, B. 1983. The role of women in household production systems and rice farming in Nepal. In Women in rice farming. Proceedings of a conference on women in rice farming systems. 26-30 Sept. 1983. IRRI, Los Banos, Philippines.
- QUDDUS, A. MD. SOLAIMAN and MD. R. KARIM. 1983. Rural women in household situation in Bangladesh. Bangladesh Academy for rural Development. Kotbari Comilla, Bangladesh.
- RASSAM, A. and D. TULLY. 1986. Gender selected aspects of agricultural labor in Northwestern Syria. Proceedings of Kansas State University's 1986 Farming Systems Symposium. Manhattan, Kansas, USA.
- RES, L. 1983. Changing labor patterns of women in Iloilo rice farm households. In women in rice farming system. 26-30 Sept. 1983. IRRI, Los Banos, Philippines.

- SHAH, WAJED ALI. 1989. Women's participation in rice farming systems of Guimba, Nueva Ecija, Philippines. A unpublished dissertation. Central Luzon State University, Nueva Ecija, Philippines.
- SAYOGYO, P., E. LESTARI, S. SURKATI, W. WIGNA, K. SURYANATA and B. WHITE. 1979. Studying rural women in West Java project on rural households economics and the role of women. In cooperation with FAO/SIDA Project, 1979, Indonesia.
- SAYOGYO, P. 1983. The role of women in different perspectives. Rural dynamic study. Agro-economic Survey and Center for Rural Sociological Research, Bogor Agriculture University, Bogor, Indonesia.
- SALAZAR, Q.C. 1988. Engineering techniques for women in rice farming systems. Paper presented at the women in rice farming systems training and planning workshop. 2-11 May 1988, IRRI, Los Banos, Philippines.
- SANTIAGO, E.S. 1980. Women in agriculture: A social accounting of female workshere. Women in Development. Special Studies. 7, 1980.
- SANTIAGO, B., B. CANAPI and V.R. CARANGAL. 1988. Women in mungbean production and storage techniques. Paper presented in Eight Farming Systems Research/Extension Symposium. 9-12 Oct. 1988. Faycttville Arkansas, USA.
- SHINAWATRA, B., B. TONGSIRI, J. PITACKWONG. 1986. Differential roles of men and women in rice farming systems of Amphoe Pheroa, Changwat Chaingmai, Thailand. Agricultural Economics Research Report. No. 18. Chiang Mai University, Thailand.
- SHRESTHA, P., L. ZIVET, B. SHARMA and S. ANDERSON. 1984. Planning, extension for farm women. HMG, Dept. of Agriculture, Kathmandu, Nepal.
- SILVER, C.B. 1977. France: Contrasts in familial and societal roles. In Criele, J.Z. and A.C.Smock (eds.) np cit.
- SINGH, P.B. 1983. An exploration into the involvement of women in agricultural enterprises at Kancahnpur District, Nepal. An M.S. Thesis, University of the Philippines at Los Banos, Philippines.

- SRIVASTAVA, J.C. 1983. Harnessing technology for eliminating the drudgery of rural women engaged in rice production, processing and utilization. In women in rice farming. Proceedings of a conference. In Women in rice farming systems. 26-30 Sept. 1983. IRRI, Los Banos, Philippines.
- STOLER, A. 1977. Rice harvesting in Kaliloro: A study of class and labor relations in rural Java. American ethnologists, Vol. 4, No. 4.
- TIMSINA, J., D. TIMSINA and N.B. CHETRY. 1988. Women's role in Nepalese farming system. A comparative study of a temperate and sub-tropical environments of Nepal. Abstracts of the Eight Farming Systems Research and Extension Symposium. 9-12 Oct. 1988. Fayetteville, Arkansas, USA.
- TINKER, I. and M.B. BRAMSEN. 1976. Women and World Development. ODC. p.3.
- UNNEVEHR, L.J. and M.L. STANFORD. 1983. Technology and the demand for women's labor in Asian farming. In women in rice farming. Proceedings of a conference on women in rice farming systems. IRRI, Los Banos, Laguna, Philippines.
- UPADHAYAYA, H.K. 1988. Labor Market Effect of Modern Rice Technology and its Implications on Income Distribution in Nepal. Unpublished Ph.D. dissertation, UPLB, Laguna, Philippines.
- WATSON, G.A. 1983. Women's role in the improvement of rice farming systems in coastal swamplands. In women in rice farming. Proceedings of a conference on woman in rice farming systems. IRRI, Los Banos, Philippines.
- WHITE, B. 1983. Women and modernization of rice agriculture: Some general issues and Javanese case study. In women in rice farming. Proceedings of a conference of women in rice farming system. IRRI, Los Banos, Philippines.
- YOUSSEF, N.H. 1976. Women in development: Urban life and labor. In women and world development. Tinker and Bramsen (eds.) ODC. p. 75.
- XELLMAN, G.L. 1976. The role of structural factors in limiting women's institutional participation. J. Soc. Issues, vol. 32(3): 33-36.