UTILIZATION OF THE RECOMMENDED FISHPOND CULTURE TECHNOLOGY AMONG THE BUREAU OF FISHERIES AND AQUATIC RESOURCES (BFAR) FARMER-COOPERATORS IN NUEVA ECIJA

AURORA V. OCAMPO

Submitted to the Faculty of Institute of Graduate Studies
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requirements for the degree of

MASTER OF SCIENCE
(Rural Development)

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EDUARDO C. PARAY
Member, Advisory Committee

5-30-91
Date Signed

LUIS S. CASTRO
Member, Advisory Committee

5/30/91
Date Signed

RUBEN C. SEVILLEJA
Member, Advisory Committee

5-30-91
Date Signed

ROSITA L. ROSE
Chairman, Advisory Committee

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NATHANIEL V. LAPITAN
Dean, IGS

6-11-91
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BIOGRAPHICAL SKETCH

Aurora V. Ocampo, who was born on December 3, 1965 in San Antonio, Nueva Ecija, is the youngest of the children of Candido Ocampo and Eleuteria Villas.

She finished her elementary course in the San Antonio Central School in 1978. She took her secondary education at Saint Paul School, San Antonio, Nueva Ecija and finished it in 1982. She enrolled at the College of Veterinary Science and Medicine, Central Luzon State University, CLSU with the hope that she will become a successful veterinarian someday. Unfortunately she was able to finish only the first four-years and graduated with the degree of Bachelor of Science in Animal Husbandry in 1986.

In 1987, she passed both the Career Service Professional and Meat Inspectors' Examination given by the Civil Service Commission.

From June 1986 to December 1990, she was employed in the municipal government of San Antonio, Nueva Ecija while being a part time student at the Institute of Graduate Studies, CLSU, under the M.S. program with Rural Development as her major field.

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"Parang kailan lang, ang mga pangarap ko'y kay hirap abutin dahil sa inyo napunta ako sa aking nais marating. Nais ko kayong pasalamatan kahit man lamang sa awitin". This song entitled "Handog" reminds the researcher that man's success is influenced by several factors; the most important of these are the people who work with her to attain her objectives. These are people with whom she shares the joys and laughter as well as frustrations.

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To all of them, this piece of work is dedicated.

Aurora V. Ocampo
AURORA V. OCAMPO

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ABSTRACT

OCAMPO, AURORA V., Institute of Graduate Studies, Central Luzon State University, Munoz, Nueva Ecija, Philippines, May 1991. UTILIZATION OF THE RECOMMENDED FISHPOND CULTURE TECHNOLOGY AMONG THE BUREAU OF FISHERIES AND AQUATIC RESOURCES (BFAR) FARMER-COOPERATORS IN NUEVA ECIJA.

Adviser: Dr. Rosita L. Rose

The study attempted to determine the socio-economic and psychological characteristics of fishfarmers; their level of technology utilization; the relationships between socio-economic and level of technology utilization; the relationships between psychological variables and level of technology utilization; and the problems encountered by the farmers in utilizing fishpond culture technology and their suggested solutions to the identified problems. The data were gathered using a structured interview schedule.

Findings showed that the average age of fishfarmer in Nueva Ecija was 54 years old, whose educational attainment was college level and whose

family was composed of six members. His farming experience was 7.5 years and a fishfarm size of 3.17 hectares. The family's annual net income which derived from farm and non-farm sources was ₱ 218,973.14. For most of the resources needed in the operation such as fingerlings, fertilizers, equipment and technology, the respondents rated them as "always available".

Contact between fishfarmers and extension agents was found to be limited and most of the respondents claimed they were "never" visited by BFAR extension agents but majority, however, "seldom" visited or contacted an extension agent. Although the result reflected the inefficiency in the delivery of services, the respondents still perceived that the extension agents were "moderately credible".

As to the level of technology utilization, 50 percent of the respondents had high level of utilization and the other half had low level of utilization. The mean utilization was 67.32.

Among the socio-economic variables studied, only length of fish farming experience was significantly related to the level of technology utilization although the relationship was inverse. This suggests that the longer the time that a fishfarmer has engaged in

fishpond culture, the more difficult it is for the extension agents to sell the idea of modern fish farming and persuade the fishfarmers to follow the recommendations.

With regard to the psychological variables, perceived credibility of extension agents revealed a positive and significant relationship with utilization. The extension agents were perceived to be "moderately credible".

Majority of the respondents (89%) encountered problems in following the recommended practices on fishpond culture. The most prevailing problem was the non-availability of good quality fingerlings. Solutions offered to solve this problem were as follows: The government should do something to increase fingerling production; Government agencies and fishfarmers should coordinate in seeking for good sources of fingerlings; BFAR should be careful and sure about the quality of fingerlings they are giving to fishpond operators; and fishfarmers should produce their own fingerlings. Other problems reported were the insufficiency of funds, insufficiency of knowledge on the technology, flood during rainy season and incompetency of some extension agents.

LITERATURE CITED

BALUAG, M. 1979. The influence of extension program of the agricultural education institutions on tobacco farming in Cagayan Valley. Unpublished Ph.D. dissertation, UPLB, College, Laguna.

BARDACH, J.E., J.H. RYTHER and W.O. MC LARNEY. 1972. Aquaculture: The farming and husbandry of freshwater and marine organisms. New York: Wiley-Interscience. pp 350-383.

BARLOW, C. et. al. 1979. Measuring the economic benefits of new technologies to small rice farmers. IRRI, Los Banos, Laguna.

BAUTISTA, A.G. and E.D. GARZON 1986. Communication system and clientele participation in food production programs (Cooperator Report).

BETTINGHAUS, E. 1973. Persuasive Communication. New York: Half Rinehart and Winston Inc. pp 102-116.

BOLIVAR, R.B. 1990. Recommended fish farming practices. Personal Interview. Freshwater Aquaculture Center, CLSU, Munoz, Nueva Ecija.

BRIONES, B.S. 1989. Some factors associated with the adoption of burley tobacco technology among farmers in selected areas of Pangasinan. Unpublished M.S. thesis, CLSU, Munoz, Nueva Ecija.

CASTRO, L.C. 1987. Clientele participation in and acceptance of the Ngayon Program (BIDANI) in Nueva Ecija. Unpublished Ph.D. dissertation, CLSU, Munoz, Nueva Ecija.

CHUA, L.S. 1983. Experience in rural development. Paper read during the workshop on rural development on April 1-3, Sponsored by the UPLB, NSDB and Assis Foundation.

CRUZ, T.S. 1981. A communication analysis of rice-fish technology dissemination and utilization. Unpublished Ph.D. dissertation, UPLB, College, Laguna.

DELA CRUZ, L.C. 1980. Socio-economic study of fishermen in Pantabangan, Nueva Ecija. Unpublished undergraduate thesis, CLSU, Munoz, Nueva Ecija.

DENNING, G.L. 1985. Adaptation and adoption of dry seeded rice in the rainfed lowlands of Iloilo and South Cotabato, Philippines. Unpublished Ph.D. Dissertation, University of Reading, England.

DINAMPO, E.C. 1980. Some factors associated with adoption of rice farming innovation by the cooperators of the Central Mindanao University Social Laboratory. Unpublished M.S. thesis, UPLB, College, Laguna.

DINAMPO, E.C. 1983. The potentials of folk media for development communication. CMU Study. Central Mindanao University, Musuan, Bukidnon.

DY, E.Y. 1979. Communication participation and outputs of tobacco farmers. Unpublished M.S. thesis, UPLB, College, Laguna.

EDNILAO, B.R. 1979. Comparative analysis of the different practices and methodologies used by technologists in extension teaching in Ilocos Norte. Unpublished undergraduate thesis, MMSU, Ilocos Norte.

ESTABILLO, B.R. 1979. Comparative analysis of the different approaches and methodology employed by different agencies involved in agricultural development in Ilocos Norte. Unpublished undergraduate thesis, MMSU, Batac, Ilocos Norte.

FESTINGER, L. 1978. A theory of cognitive dissonance. Standford, California: Standford University Press,pp. 1-291.

GRAHAM, M. 1982. Socio-economics and small-scale fisheries. ICLARM Newsletter 5 (1).

JULIANO, P.A. 1977. Farmer characteristics, adoption and recommended rice technology and tenure status among Laguna farmers. Unpublished Ph.D. dissertation, UPLB, College, Laguna.

KARN, R.L. 1985. The adoption of high yielding varieties and fertilizer application among rice farmers in Tarai, Nepal. Unpublished M.S. thesis, CLSU, Munoz, Nueva Ecija

KHOSO, Y.M. 1989. Impact of use of production package technology on standard of living of rice farmers. Unpublished Ph.D. dissertation, CLSU, Munoz, Nueva Ecija.

KONGSIN, C. 1985. Utilization of rubber technology among farmers of Rayong, Thailand. Unpublished M.S. thesis, CLSU, Munoz, Nueva Ecija.

LARIOSA, E.A. 1982. Socio-communication and cultural determinants of coconut farmers agricultural practices. Unpublished Ph.D. dissertation, UPLB, College, Laguna.

MABESA, V.L. 1979. Analysis of technology transfer through the Philippine Recommends. Unpublished M.S. thesis, UPLB, Laguna.

MEDINA, S.I. Jr. 1981. A comparative study of rice, corn and coconut farmers in terms of their adoption of recommended practices. Unpublished M.S. thesis, UPLB, College, Laguna.

MING, Y.K. 1978. Economic analysis of the factors affecting high yielding varieties and fertilizer application in the province of Negeri Sembilan, Peninsular, Malaysia. Unpublished M.S. thesis, UPLB, College, Laguna.

NAVALLO, B. 1986. Proceedings of National Science and Technology Week Symposium, PCARRD, Los Banos, Laguna.

PARWEN, K. 1989. Tomato farmers' adoption of performance package of technology in three barangays in Calamba,Laguna, Phiippines, 1986-1988. Unpublished Ph.D. dissertation, UPLB, College, Laguna.

Philippine Recommends for Tilapia. 1976. PCARRD, Los Banos, Laguna.

_____ 1987. Agriculture Facts and Figures. Published by AID Data Bank, Information Division, D.A., Quezon City.

_____ 1984. Philippine (BFAR) Freshwater Aquaculture Extension Training Manual. Volume III Technology. Bureau of Fisheries and Aquatic Resources, Quezon City.

POUDYAL, R. 1989. Some determinants of the informal credit on rice production distribution patterns among rice farmers in two Philippine villages. Unpublished M.S. thesis, CLSU, Munoz, Nueva Ecija.

RAHMAN, M. 1989. Factors associated with the effectiveness of Farmer Irrigators Association (FIA's) in Nueva Ecija, Philippines. Unpublished Ph.D. dissertation, CLSU, Munoz, Nueva Ecija.

RAMOS, C.I. 1990. Personality traits of Filipino farmer and their implication to tehnology adoption. Unpublished Ph.D. dissertation, CLSU, Munoz, Nueva Ecija.

ROGERS, E.M. 1972. Key Concepts and Models. In E.M. Rogers and Rogers and R.A. Sole (Educ.). Including technical change for economic growth and development. East Kansing, Michigan, Michigan Press. 238 p.

ROSARIO, W.R. 1990. Recommended fish farming practices. Personal Interview. Bureau of Fisheries and Aquatic Resources, Munoz, Nueva Ecija.

ROSE, R.L., T.S. ACOBA and D. VARGAS. 1987. Follow-up research conducted by PCRDC and CLSU from 1983-1985. TDUS, R & DC,CLSU, Munoz, Nueva Ecija. Volume 2.

ROSE, R.L. 1986. Communication systems and clientele participation in "Biyayang Dagat' program. TDUS, R & DC, CLSU, Munoz, Nueva Ecija. Volume 4.

SAN GABRIEL, L.C. 1988. Adoption of burley tobacco technology as performance indicator of PTRTC in collaboration with PVTA. Unpublished Ph.D. dissertation, CLSU, Munoz, Nueva Ecija.

SEVILLEJA, R.C. 1983. Tilapia Production in Freshwater Fishponds of Central Luzon, Philippines. pp. 115-126. In Smith, I.R., E.B. Torres and E.O. Tan (eds.) Philippine tilapia economics : ICLARM Conference Proceedings 12, 261 p. PCARRD, Los Banos, Laguna and ICLARM, Manila, Philippines.

SHAH, S.K. 1989. Communication analysis of farmers' technology utilization thrcugh T and V system in Janakpur zone, Nepal. Unpublished M.S. thesis, CLSU, Munoz, Nueva Ecija.

SHAHANI, L.R. 1988. A Moral Recovery Program: Building A Nation, Building A People. A Senate Task Force Report.

SHAHI, R.B. 1988. Assessment of cropping pattern technology in rice-based farming system. Unpublished M.S.Thesis, CLSU, Munoz, Nueva Ecija.

SMITH, I.R. 1979. A Research Framework for Traditional Fisheries: ICLARM Studies and Reviews No. 2. ICLARM, Manila, 45 pp.

SOFRANKO, A.J. 1984. Introducing technical change: The social settings in agricultural extension. A reference manual. FAO Publication.

THAPA, S.D. 1987. Communication utilization of the BIDANI end-users in the Province of Nueva Ecija. Unpublished, M.S. thesis, CLSU, Munoz, Nueva Ecija.

VERA CRUZ, C.M. 1983. Socio-economic analysis of fish culture in Nueva Ecija with case study on pond culture. Unpublished undergraduate thesis, CLSU, Munoz, Nueva Ecija.

UMAYAM, R. 1981. Credibility characteristics of extension workers among rice farmers in Isabela. Unpublished M.S. thesis, UPLB, College, Laguna.

WATTANAPUN, W. 1987. Village leaders' attitude towards the village reading center as communication resources of the non-formal education program in Ratchaburi, Thailand. Unpublished M.S. thesis, CLSU, Munoz, Nueva Ecija.

WILKENING, E.A. 1962. Acceptance of improved practices in three coastal plain countries. Raleigh: North Carolina Experiment Station ulletin No. 98.