

**POSTPRODUCTION PRACTICES AND TRAINING NEEDS OF CASHEW  
GROWERS IN ZAMBALES AND BATAAN**

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## ABSTRACT

CALICA, HELEN, R. Institute of Graduate Studies, Central Luzon State University, Muñoz, Nueva Ecija, Philippines. October, 1999. **POSTPRODUCTION PRACTICES AND TRAINING NEEDS OF CASHEW GROWERS IN ZAMBALES AND BATAAN.**

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The study sought to describe the socio-economic characteristics, communication-related factors and existing cashew postproduction practices of the respondents and their perceived training needs on cashew postproduction.

A total of 47 cashew farmers served as respondents. Three barangays in the municipalities of Castillejos, Zambales and Limay, Bataan were chosen as study sites because these were the largest cashew production areas in Central Luzon.

An interview schedule was used in gathering data. Description of the characteristics and extent of training needs were analyzed using frequency counts, means, percentages and standard deviations. The relationship of the independent variables (socio-economic characteristics and communication -related factors) and the dependent variables were analyzed using Pearson Product Moment Correlation Coefficient.

Results revealed that a typical cashew farmer was 53.81 years old, male, and reached elementary level of education. His relevant experience was about 17.02 years and his annual income was P3,337.45. His average farm size was 3.43 hectares, had an

average of 227 fruit bearing cashew trees, and had low exposure to media, extension agents and training courses.

The current cashew postproduction practices operation were manual and traditional which was laborious and time consuming. Tools and equipment were either inappropriate or inadequate.

There was a low awareness but high interest in processing of cashew products. For this reason cashew farmers had only very few processed products.

In general, the areas on the nature and causes of postproduction losses in cashew, methods and techniques in packaging cashew apple products, principles and methods of shelling, methods and techniques in processing cashew apple products, methods and techniques in processing cashew nut and packaging of its products, financial and economic analysis of cashew processing, marketing systems and strategies were the perceived training needs of the farmers cited according to order of priority, while the primary operation such as harvesting, drying and storage were their least training needs since these operation were already known to them.

Of the six socio-economic characteristics of the respondents, only income derived from cashew and sex of the respondents registered significant correlation with certain perceived training needs. Respondents with high income correspondingly demonstrated high need for training in such areas as drying and storage.

Income from cashew farming showed positive and significant relationship to perceived training needs on drying and storage, implying that as the income increases, training needs on drying and storage also increases. The significant relationship between sex and perceived training needs on harvesting and shelling can be associated to

the fact that harvesting was done mostly by women and they were interested in learning the easy way of shelling, particularly mechanized shelling.

Exposure to radio was significant and positively related to training needs on harvesting and storage, while exposure to television was significantly and positively related to storage. Moreover, contact to extension agents was also significantly and positively correlated with the training needs on harvesting, drying, storage, and marketing. This implies that as they are exposed to radio, television and extension agents the respondents' need for training on certain cashew postproduction operations increases.

Based on these results, the income, sex, exposure to radio, television, and extension agents which significantly influenced perceived training needs should always be considered in developing training modules/designs and/or training programs. The various channels of communication should also be used to provide cashew farmers with more opportunities to obtain meaningful information and experiences related to cashew postproduction.

## LITERATURE CITED

- AGRIBUSINESS GROUP, undated. Department of Agriculture. Philippine Agribusiness Profile: Cashew. Agribusiness Information Division/Service. Quezon City, Philippines.
- AGRIBUSINESS SYSTEM ASSISTANCE PROGRAM (ASAP), 1994. Training Manual on Cashew Production and Management, Department of Agriculture, Makati, Philippines
- ALAM, S. MD. 1988, Training needs of rice farmers under national and communal Irrigation Systems in Nueva Ecija, Unpublished M.S. Thesis, Central Luzon State University, Munoz, Nueva Ecija.
- ALLPORT, F.H. 1955. Theories of Perception and the Concept of Structure. New York: John Wiley and Sons, Inc.
- AMIHAN, B.T. 1981. Leyte farmers' perception of and expectations from the National Coconut Planting Program: Unpublished M.S. Thesis. University of the Philippines at Los Banos, Laguna, Philippines
- ANDRES, H., et al. 1983. Community management irrigation system. Central Luzon State University, Munoz, Nueva Ecija, Philippines.
- ARAGONES, S. O. 1977. Barrio-based farmer organization and agricultural development in selected social laboratory pilot centers in the Philippines. Unpublished Ph.D Dissertation, UPLB, Laguna, Philippines.
- BALDERAS, R.S. 1970. Some factors associated with perception of adequacy of the training experience by Camarines Sur National Agricultural School graduates. Unpublished M.S. Thesis. University of the Philippines at Los Banos, Laguna, Philippines.
- BATTEN, T.R. , 1962. Educational for Community Development. London: Oxford University Press.
- BOORE, E.J., 1985. Developing Programs in Adult Education. New Jersey: North Carolina State University: Prentice Hall, Inc.
- BOYLE, P.G., 1981. Planning Better Programs. New York: Mc-Graw Hill, Inc.

- BUREAU OF POSTHARVEST RESEARCH AND EXTENSION, 1996. State of the cashew postharvest industry in the Philippines, Unpublished paper. Planning and Evaluation Department, BPRE, CLSU, Munoz, Nueva Ecija, Philippines.
- CALLE, R. N., 1979. The training needs of rice farmers in Biliran Sub-Province. Unpublished M.S. Thesis, University of the Philippines, College, Laguna, Philippines.
- COMBS, A.W., 1962. Chairman, Perceiving, Behaving, and Becoming: A new focus for education. ASCD, 1962, year book committee, Association for supervision and curriculum development. National Education Association, Washington, D.C.
- DACANAY, E.A., 1979. Perception and utilization of agricultural credit in Camarines Sur. Unpublished M.S. Thesis. University of the Philippines at Los Banos, Laguna, Philippines.
- DEPARTMENT OF AGRICULTURE, 1995. Cashew (*Anarcadium Occidentale*) Unpublished paper distributed at KCCDP Meeting, Quezon City, Philippines.
- DEPARTMENT OF AGRICULTURE, 1990. Cashew: An Industry profile. Published paper prepared by the Urban Food Foundation, Inc. for the Department of Agriculture, Quezon City, Philippines.
- DEPARTMENT AOF AGRICULTURE, Area Survey 1997. Office of the Provincial Agriculture., Bataan, Philippines.
- ESPIRITU, J.A., et al., 1997. The socio-economic technical evaluation of the cashew postproduction industry in Central Luzon. Unpublished paper, WLAC, San Marcelino, Zambales and BPRE, Munoz, Nueva Ecija, Philippines.
- IGNACIO, D.D. 1979. Placement and training needs of the agricultural technicians graduates of the Mariano Marcos State University. Unpublished M.S. Thesis, University of the Philippines at Los Banos, Laguna.
- KNOWLES, M.S. 1950. Information Adult Education. New York: Association Press.
- KUNDO, C. L. and Tutoo, D.N., 1985. Educational Psychology. New Delhi: Sterling Publishers.
- LALL, BIDYA SAGAR, 1973. Role of perception and in-service training needs of rural life program workers of church projects of rural uplift in the Philippines. Unpublished M.S. Thesis. University of the Philippines at Los Banos, Laguna.

- LEAGANS, J.P. 1964. "A concept of needs". *The journal of cooperative Extension*, 2 (Summer 1964), 89 – 96.
- MASLOW, A.H. 1954. *Motivation and Personality*. New York: Harper and Brother
- MC MAHON, E.E. 1970. *Needs of People and Their Communities and the Adult Educator*. Washington. D.C.: Adult Education Association of the U.S.A.
- NAMUCO L. O. *Cashew Production, Techno-Guide series no. 23*. University of the Philippines and Technology Livelihood and Resource Center, 1988.
- ORDA, I. 1980. *In-service training needs of rural growth development officers in 11 selected provinces in the Philippines*. Unpublished M.S. Thesis. University of the Philippine at Los Banos, Laguna.
- PHAUNGRAUNG, C., 1980 *Training needs of rice farmers in CLSU technology pack. Project barangays*. Unpublished M.S. Thesis. Central Luzon State university, Munoz, Nueva Ecija, Philippines.
- RATTANAVICHAIN, S. 1988. *Perceived Extension Education and Service Needs on Rice Farmers in selected Districts in Sakonnakhon Province, Thailand*. Ph.D dissertation, Central Luzon State University, Munoz, Nueva Ecija, Philippines.
- RICAFORT, F.D., 1990. *Capability-building needs of selected federations of farmers' irrigators associations in Nueva Ecija*. Unpublished Ph.D. Dissertation. Central Luzon State University, Munoz, Nueva Ecija, Philippines.
- RIGOR, R.D., 1994. *Factors associated with the pervceived training needs of farmer-leaders on postharvest in three towns of Nueva Ecija*. Unpublished M.S. Thesis, central Luzon State University, Philippines.
- ROSENBERG, M.J. and HOVLAND, C.I., 1963. *Attitude, Organization and Change: An Analysis of Consistency Among Attitude Components*. New Haven & London Yale University Press.
- SALCEDO, R.N. 1972, *The instructional needs of adult farmers in Leyte*. Unpublished M.S. Thesis, University of the Philippines at Los Banos, Laguna.
- SCHRAMM, W., 1964. *Mass Media in National Development*. Standford: Standford University Press.

- SHARMA, J.P., 1985. Factors associated with perception of 4-H clubs contribution to members and to the community in Munoz, Nueva Ecija. Unpublished M.S. Thesis. Central Luzon State University, Munoz, Nueva Ecija, Philippines.
- SHRESTHABUTE, S. 1990. Correlates of contact farmers' perception of credible extension agents. Unpublished Ph.D. Dissertation . Central Luzon State University, Munoz, Nueva Ecija, Philippines.
- SINIVES, S. 1988. Training needs of foresters as perceived by them and their administrators. Unpublished M.S. Thesis. University of the Philippines at Los Banos, Laguna.
- SOMSUEB, C. 1988. Perceived in-service training design for community development specialists in Thailand. Unpublished Ph.D. Dissertation. Central Luzon State University, Munoz, Nueva Ecija, Philippines
- TYLER, R.W. 1970. Basic Principles of Curriculum and Instruction. Chicago: The University of Chicago Press.