

AN EVALUATION OF THE NATIONAL MAIZE DEVELOPMENT PROGRAM  
IN NARAYANI ZONE, NEPAL

KAILASH N. GONGAL

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

MASTER OF SCIENCE  
(Rural Development )

March, 1986

## TABLE OF CONTENTS

	PAGE
LIST OF TABLES	xi
LIST OF APPENDIX TABLES	xiv
LIST OF FIGURES	xv
ABSTRACT	xvi
INTRODUCTION	1
Statement of the Problem	3
Objectives of the Study	4
Hypotheses of the Study	5
Importance of the Study	5
Limitation of the Study	6
REVIEW OF LITERATURE	8
Extension Services	8
Input: Assistance	10
Credit Assistance	11
Irrigation Assistance	13
Maize Productivity	13
Assessment of Program Performance	14
METHODOLOGY	16
Locale of the Study	16
Conceptual Framework	16
Definition of Terms	19

	PAGE
Unit of Analysis	22
Sampling Technique	22
Data Collection	23
Measurement of Variables	23
Data Analysis	27
Level of Significance	29
RESULTS AND DISCUSSION:	30
Socio-economic Factors	30
Timeliness, Adequacy and Efficiency of Extension Services	31
Timeliness, Adequacy and Efficiency of Institutional Assistance	43
Mean Indices of NMDP Extension Services and Institutional Assistance	48
Efficiency Levels of Productivity and Adoption of Maize Farmer-Respondents in NMDP	49
Relationship Between Independent and Dependent Variables Using Pearson Product Moment Correlation	51
Analysis of Relationships of Socio-economic Factors with Dependent Variables Using Chi-square	62
Multiple Regression Analysis of Independent Variables with the Dependent Variables	64
Problems of NMDP as Identified by Farmer- Respondents and Technicians	66
Farmers' Suggestions for Improvement of National Maize Development Program (NMDP)	69

	PAGE
Problems of NMDP as Identified by Technicians	71
Technicians' Suggestions for the Improvement of NMDP	74
SUMMARY, CONCLUSIONS AND IMPLICATIONS AND RECOMMENDATIONS	76
Summary	76
Conclusions and Implications	80
Recommendations	82
LITERATURE CITED	85
APPENDICES	89
INTERVIEW SCHEDULE (Questionnaire)	92

## LIST OF TABLES

TABLE		PAGE
1	Age distribution of farmer-respondents	30
2	Frequency distribution of maize farmer-respondents according to length of farming experiences	31
3	Distribution of farmers according to the types of training received	32
4	Distribution of maize farmer-respondents according to perceived timeliness and adequacy levels of training delivery	34
5	Distribution of maize farmer-respondents according to perceived efficiency of training delivery	34
6	Distribution of farmers according to preferred topics of training in other aspects of improved maize production practices	35
7	Distribution of farmers according to the type of result demonstrations they visited	36
8	Distribution of respondents according to perceived timeliness and adequacy levels of result demonstrations done by NMDP	37
9	Distribution of respondents according to perceived efficiency of result demonstrations done by NMDP	37
10	Distribution of farmers according to the number of times they participated in field trips	38
11	Distribution of maize farmer-respondents according to perceived levels of timeliness and adequacy levels of field trips	39

## TABLE

## PAGE

12	Distribution of maize farmer-respondents according to perceived levels of efficiency of field trips	40
13	Distribution of maize farmer-respondents according to number of minikits received from NMDF	41
14	Distribution of maize farmer-respondents according to perception of timeliness and adequacy levels of minikits	42
15	Distribution of maize farmer-respondents according to perception of efficiency levels of minikits	42
16	Distribution of farmer-respondents according to perceived timeliness and adequacy levels of input services	43
17	Distribution of farmer-respondents according to perceived efficiency levels of input services	44
18	Distribution of respondents according to the number of credit assistance received	45
19	Distribution of farmer-respondents according to levels of timeliness and adequacy of credit assistance	46
20	Distribution of farmer-respondents according to levels of efficiency of credit assistance	46
21	Distribution of maize farmer-respondents according to perceived timeliness and adequacy of irrigation assistance	47
22	Distribution of maize farmer-respondents according to perceived efficiency levels of irrigation assistance	48
23	Mean efficiency indices of NMDF extension services and instituting assistance as perceived by the farmers	49

		PAGE
24	Distribution of farmers according to productivity index	50
25	Distribution of maize farmers according to adoption index	51
26	Correlation between independent and dependent variables	61
27	Chi-square analysis of socio-economic factors and adoption of improved maize technology	63
28	Chi-square analysis of socio-economic factors and maize crop productivity	64
29	MRA results of independent variables with improved maize technology adoption and crop productivity	66
30	Problems identified by farmer-respondents	68
31	Suggestions for the improvement of NMDP	70
32	Problems identified by NMDP technicians	73
33	Technicians suggestions for the improvement of NMDP	75

## LIST OF APPENDIX TABLES

TABLE		PAGE
1	Relationship of age and the adoption of improved maize technology	90
2	Relationship of age and maize crop productivity	90
3	Relationship of length of farming experiences and adoption of improved maize technology	91
4	Relationship of length of farming experiences and maize crop productivity	91

## LIST OF FIGURES

FIGURE		PAGE
1	Map of Nepal showing the research area	7
2	Conceptual paradigm showing the relationship between independent and dependent variables	18

## ABSTRACT

GONGAL, KAILASH N., Central Luzon State University, Muñoz, Nueva Ecija, Philippines, March 1986. An Evaluation of the National Maize Development Program in Narayani Zone, Nepal.

Major Adviser: Dr. Romeo L. Saplaco

To determine the performance of the National Maize Development Program of Narayani Zone, Nepal, the study used an interview schedule in collecting the data from 291 maize farmers in the area.

Based on the socio-economic profile of the respondents, the classified mean age of the maize farmers was 40.62 years and the mean number of farming experience was 13.65 years.

Extension services of NMDP were rated as: (1) training held were mostly timely and delivered adequately and efficiently to maize farmers; (2) result demonstrations conducted were perceived to be both moderately timely, moderately adequate but efficient; (3) field trips were timely, adequately and moderately efficient; (4) minikits dispersal was rated moderate in all levels.

Many of the farmer-respondents availed of both agricultural input and credit assistance, but not the irrigation assistance.

Highly significant relation existed between adoption of improved maize technology and field trips, minikit dispersal, input assistance, and credit assistance. Significant relation was observed between training and result demonstrations. Likewise, field trips and

irrigation assistance had high significant relation with crop productivity. Result demonstrations, minikit dispersal and input assistance were significantly related to crop productivity.

Multiple regression analysis showed that input assistance contributed significantly to the level of adoption of improved maize technology. Field trips and irrigation assistance were significantly related with crop productivity.

Problems commonly met by farmers were lack of irrigation facilities, non-availability of agricultural inputs at the time of need, and crops damaged by wildlife. Moreover, technicians wanted to provide solutions to inability of NMDP researchers and extensionists in gathering feedback from cooperators, lack of incentives to farmers for better production, and inefficiency of field technicians in the delivery of technology to maize farmers.

## LITERATURE CITED

- AGABIN, M. 1975. Economic implications of Masagana Program. Effective Delivery of Extension Services and the Masagana Program. CPDS, UPLB, College, Laguna. p. 55.
- ALAMPI, P. 1970. Education of farmers in the seventies. Agriculture Education Magazine. 42(10):246.
- APROSC, NEPAL. 1979. Impact study of small farmers' development and project. Agricultural Project Service Centre, Kathmandu.
- BATTAD, F.A. 1973. Factors associated with the adoption of rice technology in Cotabato. Unpublished Ph.D. dissertation. UPLB, College, Laguna. pp. 139-140.
- BHUKTAN, J.P. 1984. Sustenance and viability of small farmers groups. Unpublished M.S. theses. UPLB. p. 238.
- CASTILLO, G.T. 1975. All in a grain of rice. UPLB, College, Laguna.
- CHU, E.C. 1973. High yielding rice varieties at the crossroads, three post-trial alternatives decision among farmers. Unpublished M.S. thesis. UPCA. p. 102.
- CONTADO, T.E. 1969. Communication fidelity between farm management technician and rice farmers in Leyte, Philippines. Unpublished Ph.D. dissertation. Cornell University, Ithaca, New York. p. 260.
- CPDS. 1975. Effective delivery of extension services and the Masagana programs. UPLB, College, Laguna. p. 11.
- DAVIS, J.H. 1969. Group performance. Reading, Mass. Addison Wesley.
- DEROGONGAN, M.B. 1973. The rice production programme in a Maranaw community. Unpublished Ph.D. dissertation. UPCA, College, Laguna.
- DE GUZMAN, C.M. and A.M. DE GUZMAN. 1967. Corn-rice farmers response to changes in cropping pattern. A Case Study. Minco-rahod.
- DOLYER, D. and G. JIMENEZ. 1977. Supervised credit as a tool in agricultural development. American Journal of Agricultural Economics. 53(4):639-642.
- DUENBERTI, H.L. 1966. An extension reference manual. Selected readings to accompany getting agricultural moving. The Agricultural Development Council, New York. 21: 867.

- GITTINGER, J.P. 1982. Economic analysis of agricultural projects. EDI, John Hopkins University Press. Baltimore and London. p. 47.
- HANDBYNSSEN, F. 1972. The meaning of development and its educational implications. Perspective on Development, ASDC reprint. Oct. 1972. p. 6.
- JAIME, R.E. 1971. The diffusion and adoption of some recommended practices in swine production in Laguna, Philippines. Unpublished M.S. thesis. UPCA, College, Laguna.
- KASYRNO, F. 1974. Farmers association as a vehicle for rural development. A Case Study in Muda Irrigation Scheme, Malaysia. Unpublished Masters Thesis. UPLB, College, Laguna. p. 56.
- KELSEY, L.D. and C.C. HEARNE. 1963. Cooperative extension work. 3rd edition, New York. Comstock Publishing Associates. p. 32.
- LINGAMNENE, J.R. 1981. Communication channels/sources in the innovation-decision process: a comparative review of U.S. and Indian Diffusion Research. Extension Education and Rural Development. Vol. I. Edited by Crouch, B.E. and Shankeriah Chamla. John Wiley and Sons, New York. p. 148.
- MARSH, C.P. and A.L. COLEMAN. 1955. The relation of farmer characteristics to the adoption of recommended farm practices in connection with project of Kentucky agricultural experiment station. Rural Sociology Journal. 20(3-4):290.
- MFA HMG. 1981. Nepal's experience in hill agricultural development. Kathmandu. pp. 106-107.
- MIRKUT, J. JR. 1970. Adult education for migrants. Journal of Extension. 8(4):46.
- OMAR, F., P.R. SANDOVAL and S. SIMPOS. 1975. Policies and programs in agricultural extension services: as assessment. Effective Delivery of Extension Services and the Masagana Programs. CPDS, UPLB, College, Laguna. p. 29.
- ONATE, B. and P. ONATE. 1980. Agricultural and rural development issues and strategies, an overview of Asia. Journal of Agricultural Economics and Development. 10(1):42.
- RAJBHANDARY, G. 1975. Nepal National Maize Development Program. Paper presented at the 10th Inter-Asian Corn Improvement Workshop. Agricultural Research Council, Pakistan. p. 107.

- RAJBHANDARY, G. 1980. National Maize Development Program Coordinator's Report. Paper presented at the 6th National Maize Development Workshop. 1979. National Maize Development Program. Rampur, Chitwan, Nepal.
- \_\_\_\_\_. 1983. Nepal National Maize Development Program Coordinator's Report. Paper presented at the 11th Summer Crops Workshop. 1984. National Maize Development Program. Rampur, Chitwan, Nepal. p. 7.
- RIVERA, F.T. 1976. The production consumption behavior of farmer cultivator households in six Nueva Ecija barrios. Unpublished Ph.D. Dissertation. UPLB, College, Laguna.
- SABAS, H.V. 1978. Training as support to agricultural and rural development. Extension Forum. UPLB, College, Laguna (January-March). 2(1):6.
- SANDOVAL, P. 1980. Agricultural credit and small farms, experiences, policies and programs. Philippine Agricultural Economics and Development Associations, Inc. Journal of Agricultural Economics and Development. 10(1):75.
- SCHRAM, W. 1973. Communication development and the development process. Lucian W. Pye (ed) Communication and Political Development. New Jersey: Princeton University Press. p. 30.
- SCHWASS, R. 1981. Aspects of agricultural development in the south pacific, ASPAC, Food and Fertilizer Technology Center. Extension Bulletin No. 159.
- SHARMA, J.S. and B. PRASAD. 1971. An assessment of production credit needs in developing agriculture. Indian Journal of Agricultural Economics. 26(4):510.
- SHLI, Y.K. 1980. Support policies for future development of fertilizers use in Asia. ASPAC, Food and Fertilizer Technology Center, Extension Bulletin, No. 142. p. 1.
- SHEY, Y.D. 1980. Cooperative agricultural financing by farmers' associations in Taiwan, ASPAC, Food and Fertilizer Technology Center. Extension Bulletin No. 147. p. 1.
- TODARO, M. 1977. Economics for a developing world. An Introduction to Principles, Problems and Policies for Development. London: Longman Group, Ltd. p. 246.

WHITAKER, M. 1973. Supervised credit, its impact on profit, production, factor use, technical change and efficiency of resource allocation in corn production in Columbian agriculture. Additional paper, AID Spring Review of Small Farmer Credit. June. 16:48.

WORCHELL, P. and D.E. BYRNE. 1964. Personality change. New York. John Wiley and Sons, Inc. p. 540-564.