

**STRENGTHENING MSAC PROGRAMS FOR INCREASED
AGRICULTURAL PRODUCTIVITY**

**ANNUAL REPORT
SY 1984-1985**

**MOUNTAIN STATE AGRICULTURAL COLLEGE
LA TRINIDAD, BENGUET**

FORTUNATO A. BATTAD
President

Hermen

STRENGTHENING MSAC PROGRAMS FOR INCREASED
AGRICULTURAL PRODUCTIVITY

ANNUAL REPORT
SY 1984-1985

MOUNTAIN STATE AGRICULTURAL COLLEGE
LA TRINIDAD, BENGUET

FORTUNATO A. BATTAD
PRESIDENT

Republic of the Philippines
MOUNTAIN STATE AGRICULTURAL COLLEGE
La Trinidad, Benguet

July 31, 1985

His Excellency
PRESIDENT FERDINAND E. MARCOS
Republic of the Philippines
Malacañang, Manila

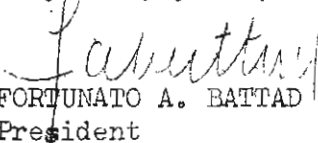
Through: The Hon. JAIME C. LAYA
Chairman, MSAC Board of Trustees and
Minister of Education, Culture and Sports

Sir:

I have the honor to submit the Annual Report of the Mountain State Agricultural College for the School Year 1984-1985.

I am pleased to report that during the year, the institution had taken vigorous and decisive steps towards becoming a regional institution in the Cordillera highlands and nearby areas as manifested in its newly implemented six-year program of development (1984-1989).

Very truly yours,


FORTUNATO A. BATTAD
President

/jdf

TABLE OF CONTENTS

	<u>PAGE</u>
I. EXECUTIVE SUMMARY	iv
II. THE NEW GOVERNANCE SCHEMA	1
III. INSTRUCTION	4
A. Academic Programs	4
B. Enrolment	6
C. Graduates	7
D. Curriculum Review and Development	8
E. Faculty Profile	10
F. Faculty Development	10
G. Student Services	14
H. The Colleges	20
IV. RESEARCH	23
A. Research Breakthroughs	23
B. Completed Researches	24
C. On-Going Researches	33
D. Proposed Researches	40
E. Specialized Research Units	41
1. Northern Philippines Root Crops Research and Training Center (NPRCRTC)	41
2. Highland Agricultural Research Center (HARC)	43
V. EXTENSION	51
A. Extension Service Projects	51
B. Training Programs	51
C. Other Extension Services	51

TABLE OF CONTENTS

	<u>PAGE</u>
D. Specialized Training Unit	52
1. Regional Training Center for Rural Development (RTC-RD)	52
VI. AGRIBUSINESS-ORIENTED PRODUCTION PROJECTS	56
VII. ADMINISTRATION	59
A. Profile of Non-Academic Staff	61
B. Infrastructure and Site Development	62
VIII. APPROPRIATIONS/FISCAL SUPPORT FOR 1984	63
IX. EXTERNAL LINKAGES	64
X. INSTITUTIONAL PROBLEMS/RECOMMENDATIONS	65
XI. BOARD OF VISITORS/TRUSTEES	68
XII. EXECUTIVE COMMITTEE	69

EXECUTIVE SUMMARY

The Mountain State Agricultural College (MSAC) in La Trinidad, Benguet stands today as a premier institution of higher education, research, extension and training in agricultural sciences and rural development in the mountain provinces of Northern Philippines.

To provide the best education in the tradition of excellence, effectiveness and efficiency, MSAC has continuously expanded, broadened and strengthened its major programs: instruction, research, extension and production in response to regional and national needs. This institutional growth has been backed up by intensive human resource development and expansion in physical resources and facilities.

Recognized for its close affinity with countryside problems, MSAC's commitment to agricultural and rural development is manifested through its continually expanding and evolving academic and development programs.

At present, a total of six (6) colleges have been established in response to the need of a more streamlined and delineated functioning of each discipline. These are: College of Agriculture, College of Forestry, College of Arts and Sciences, College of Teacher Education, College of Applied Engineering and Technology and Graduate School.

MSAC offers the following curriculae related to agricultural and rural development:

Graduate School -- Master of Science in Agricultural Education, Master of Science in Extension Education, Master of Science in Agricultural Economics, Master of Science in Rural Development, Master of Educa-

tion in Practical Arts, Master of Education in Home Economics and Master of Science in Agriculture with the following areas of specialization: Agronomy, Animal Science, Horticulture, Soil Science, Entomology and Plant Pathology and Doctor of Philosophy (Ph. D.) in Agricultural Sciences (Horticulture, Agricultural Education, Rural Development) which will be offered this first semester, SY 1985-86 in consortium with the Saint Louis University, Baguio City.

Undergraduate Studies baccalaureate courses include the following: Bachelor of Science (B.S.) in Agriculture, BS in Agricultural Education, BS in Home Technology, BS in Agri-Business Management, BS in Agricultural Economics, BS in Animal Technology, BS in Forestry and BS in Agricultural Engineering.

MSAC also has a Vocational and Agricultural Science and General Science Laboratory and offers Elementary education too.

In order to carry out its functions effectively and efficiently, MSAC sponsors continuing human resource development to help strengthen the capability of its mentors (i.e., sending faculty members to attend degree and non-degree courses here and abroad). The teaching force of MSAC has 22 Ph. D/Ed. D., 89 MA/MS, and 155 A.B./B.S.; or a total of 266. As of school year 1984-1985, the faculty has some 231 educational researchers and administrative personnel.

For greater applicability and effectiveness, research at MSAC is interdisciplinary, integrated and multi-functional. Research activities go hand in hand with instruction. Innovations and data generated from research enrich the teaching and outreach programs of the Institution.

Today, MSAC researches are carried out in laboratories, experimental farms and some pilot areas in the highland region. There are several specialized research units based in the Institution. These are the Highland Agricultural Research Center (HARC), the Northern Philippines Root Crops Research and Training Center (NERCRTC) and the Highland Crops Research Station (HCRS) of the Institute of Plant Breeding (IBP).

Agricultural research is of little use if techniques, discoveries and inventions of scientists are not adopted by farmers. To facilitate the transfer of technological innovations developed by MSAC to its rightful beneficiaries, the Institution conducts field studies on extension approaches and strategies for countryside development.

Some of the outreach projects of MSAC are:

- Agri-Forest Special Project which translates into reality the dream of establishing a center for semi-temperate fruit culture in Asia. This new and multi-purpose scheme of reforesting bald mountains with fruit trees has been conceived in an effort to help cushion the possible adverse effects of deforestation in the Cordilleras.

- MSAC Demonstration Commercial Farms maintain income-generating projects in the campus. Some of these projects are poultry, swine, strawberry, peas, potatoes and mushrooms. These projects demonstrate newly developed farm technologies of the Institution for their workability, adaptability and profitability. Hence, they serve as training ground for students and likewise as examples for the general public.

- Regional Training Center for Rural Development (RTC-RD) is the venue of various local, national and international training courses, seminars, and conferences for extensionists, resource persons and farmers.

- Highland Rural Development Program (HRDP) with funding coming from the Ford Foundation was formally launched in December 1983 with the main objective of intensifying countryside transformation through effective technology generation, verification, and utilization schemes. A built-in manpower development program for MSAC faculty and staff is a main component of HRDP.

- Extend free consultation and field services to farmers on cultural practices of various vegetables and fruit crops, poultry and swine, and flower production.

The total land area of the MSAC Complex is 653.58 hectares distributed as follows: Forest and watershed - 230.1669 hectares; vegetable areas - 82.5094 hectares; pasture land - 60.0 hectares; agro-forestation - 164.0242 hectares; main campus - 27.5855 hectares; animal project - 4.5 hectares; floriculture - 1.9386 hectares; mushroom and moriculture - 15.1876 hectares; pomology - 5.8 hectares; in-land fish nursery - 3.0 hectares; and others - 58.8678 hectares.

THE NEW GOVERNANCE SCHEMA

The basic framework of the re-organization provides for three (3) designated Vice Presidents (instead of one) in charge of the essential, supportive as well as complementary units and with the Office of the President having direct supervision of the key academic and research and development units and one Executive Vice President.

The Institution has created six colleges: College of Agriculture (CA), College of Applied Engineering and Technology (CAET), College of Forestry (COF), College of Arts and Sciences (CAS), College of Teacher Education (CTE) and the Graduate School (GS).

These units (some of which like CAET and CTE were organized by reconstituting existing departments) are necessary so that MSAC can bring into proper focus the special development concerns covered by these units, concurrently allowing for interdisciplinary work on specific problem areas.

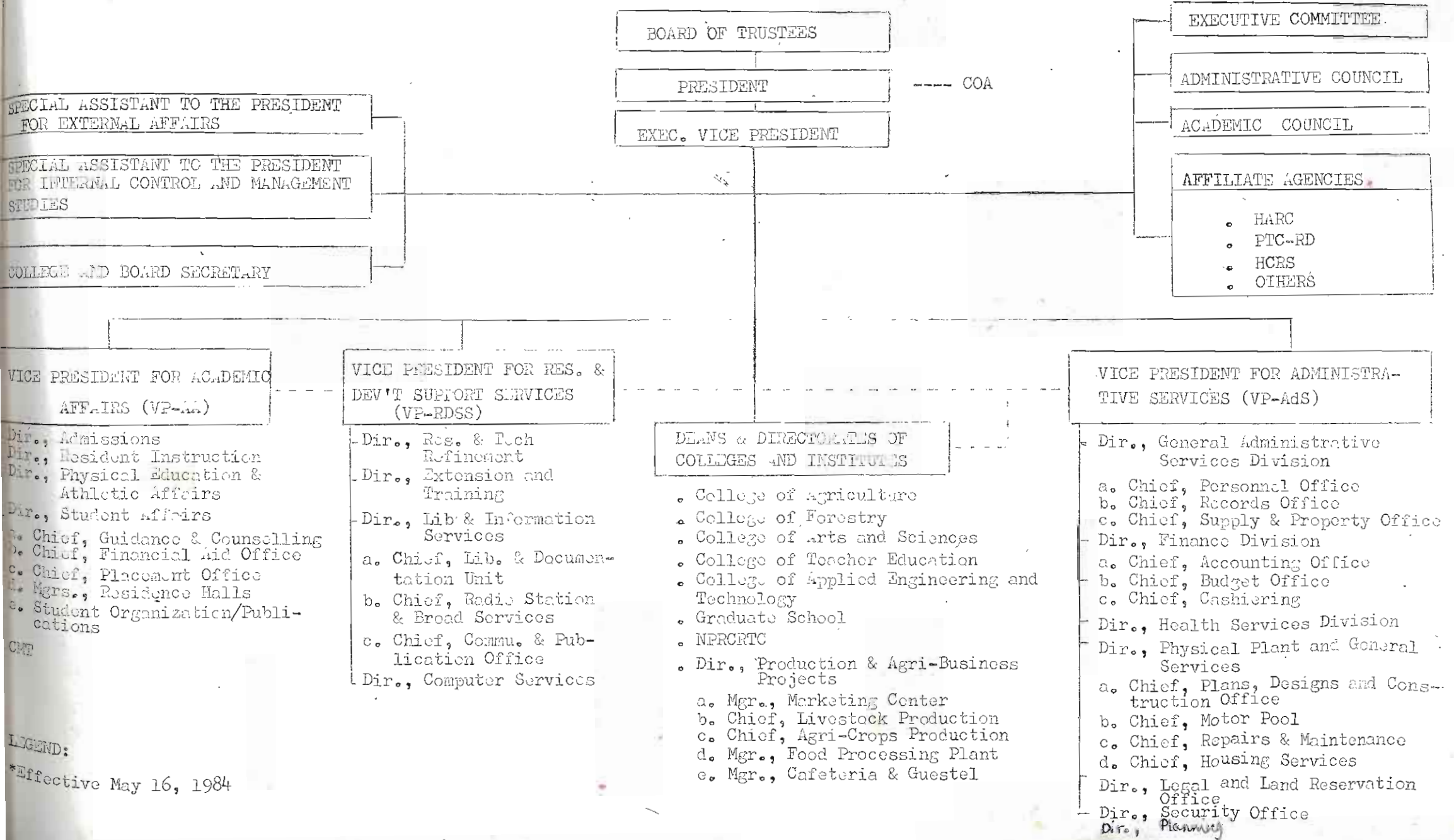
The academic programs of the colleges depend on the Vice President for Academic Affairs (VP-AA) for coordination, monitoring and management support.

By the same token the offices under the Vice President for Research and Development Support Services (VP-RDSS) assume basic responsibility over all R & D and extension projects of MSAC. While most of these projects originate from the key colleges, institutes, units as well as centers, coordination and project management support services come from VP-RDSS.

On the other hand, the offices under the Vice President for Administrative Services (VP-AdS) provide the logistical support services

needed to administer and run the Institution efficiently. The different offices performing the various administrative support services functions are now grouped under the VP-AdS.

Consequently, the staff units headed by a Special Assistant to the President has been divided into two, namely: External Affairs, and Internal Control and Management Studies. The Office of the College Board Secretary continues to perform traditional staff services for the Institution.



SPECIAL ASSISTANT TO THE PRESIDENT FOR EXTERNAL AFFAIRS

SPECIAL ASSISTANT TO THE PRESIDENT FOR INTERNAL CONTROL AND MANAGEMENT STUDIES

COLLEGE AND BOARD SECRETARY

EXECUTIVE COMMITTEE

ADMINISTRATIVE COUNCIL

ACADEMIC COUNCIL

AFFILIATE AGENCIES

- o HARC
- o PTC-RD
- o HCRS
- o OTHERS

VICE PRESIDENT FOR ACADEMIC AFFAIRS (VP-AA)

VICE PRESIDENT FOR RES. & DEV'T SUPPORT SERVICES (VP-RDSS)

VICE PRESIDENT FOR ADMINISTRATIVE SERVICES (VP-AdS)

DEANS & DIRECTORATES OF COLLEGES AND INSTITUTES

- Dir., Admissions
- Dir., Resident Instruction
- Dir., Physical Education & Athletic Affairs
- Dir., Student Affairs
- a. Chief, Guidance & Counselling
- b. Chief, Financial Aid Office
- c. Chief, Placement Office
- d. Mgrs., Residence Halls
- e. Student Organization/Publications

- Dir., Res. & Tech Refinement
- Dir., Extension and Training
- Dir., Lib & Information Services
- a. Chief, Lib. & Documentation Unit
- b. Chief, Radio Station & Broad Services
- c. Chief, Commu. & Publication Office
- Dir., Computer Services

- College of Agriculture
- College of Forestry
- College of Arts and Sciences
- College of Teacher Education
- College of Applied Engineering and Technology
- Graduate School
- NPRCRTC
- Dir., Production & Agri-Business Projects
- a. Mgr., Marketing Center
- b. Chief, Livestock Production
- c. Chief, Agri-Crops Production
- d. Mgr., Food Processing Plant
- e. Mgr., Cafeteria & Guestel

- Dir., General Administrative Services Division
- a. Chief, Personnel Office
- b. Chief, Records Office
- c. Chief, Supply & Property Office
- Dir., Finance Division
- a. Chief, Accounting Office
- b. Chief, Budget Office
- c. Chief, Cashiering
- Dir., Health Services Division
- Dir., Physical Plant and General Services
- a. Chief, Plans, Designs and Construction Office
- b. Chief, Motor Pool
- c. Chief, Repairs & Maintenance
- d. Chief, Housing Services
- Dir., Legal and Land Reservation Office
- Dir., Security Office
- Dir., Planning

LEGEND:

*Effective May 16, 1984

A. Academic Programs

To provide the best education in the tradition of excellence, effectiveness, and efficiency, the Institution has continuously broadened and strengthened its academic programs, with the aim to develop and produce highly trained professionals.

At present, the Institution offers eight (8) masteral degree programs, seven (7) baccalaureate degree programs, secondary education, post secondary/non-degree programs, elementary education including kindergarten.

The academic programs offered by the Institution are the following:

Graduate Programs

Masteral Degree Programs

Master of Science in Agricultural Education

Master of Science in Extension Education

Master of Science in Rural Development

Master of Science in Agricultural Economics

Master of Science in Agriculture

Major in: a) Agronomy

b) Animal Science

c) Botany

d) Entomology

e) Horticulture

f) Plant Pathology

g) Soil Science

Master of Education in Practical Arts

Master of Education in Home Economics

Master of Science in Forestry

Undergraduate Degree Programs

Bachelor of Science in:

Agriculture

Agricultural Education

Home Technology

Agricultural Engineering

Forestry

Animal Technology

Agricultural Economics

Bachelor in Agri-Business Management

Post Secondary/Non-Degree Programs

Agri-Mechanics

Agri-Forestry

Dressmaking

Tailoring

Baking

Food Preservation

Secondary Education

Vocational Agriculture

Home Economics

Special Agricultural Science

General Curriculum

Elementary Education

Kindergarten

B. Enrolment

The total enrolment in the different levels of instructions for the first semester of SY 1984-1985 was 4,093, or 3.81% less than of the last year while 3,835 for the second semester or 8.27% less compared to last year of the same semester. The summer enrolment for 1984 was 1,289 or a 2.79% decreased as compared last Summer, 1983. The following table indicates the enrolment by levels.

Table 1. Enrolment by level, SY 1984-1985

Academic Programs	Summer, 1984	Ist Sem 1984-1985	2nd Sem 1984-1985
1. Graduate Programs	107	140	144
2. Undergraduate Programs			
BS in Agriculture	300	500	458
BS in Agric'l Education	439	658	555
BS in Home Technology	157	234	209
BS in Agric'l Engineering	52	140	128
BS in Forestry	90	213	162
BS in Animal Tech/D Vet Med	60	119	94
B in Agri-Business Management	75	142	136
Sub-total	1,280	2,146	1,886
3. Post Secondary/Non-Degree Programs			
Agri-Mechanics	-	42	32
Agri-Forestry	9	5	5
Dressmaking	-	5	9
Tailoring	-	4	-
Baking	-	9	13
Food Preservation	-	-	8
Sub-total	9	65	67
4. Secondary	-	1,068	1,068
5. Elementary	-	814	814
GRAND TOTAL	1,289	4,093	3,835

Table 2. Foreign Students Enrollment

Degree	Sex		Total
	Male	Female	
Graduate	9	0	9
Undergraduate	0	1	1
TOTAL	9	1	10

C. Graduates

The total number of 768 graduates as of SY 1984-85 from all the academic programs follows: Tertiary level, 339; Post Secondary level, 84; Secondary level, 206; and Elementary level, 139.

Table 3. Graduates as of April, 1985 and Summer and October, 1984

Curricular Program	April '85	Summer '84	October '84	Total
1. Tertiary				
MS	13	3	2	18
BSA	66	8	16	90
BSAE	64	19	34	117
BSA Engineering	19	5	5	29
BABM	15	1	4	20
BSHT	11	7	11	29
BSF	10	5	3	18
BSAT	14	3	1	18
Sub-total	212	51	76	339

Table 3. continued.

Curricular Program	: Apr : '84	: Summer : '84	: October : '84	: Total
2. Post Secondary				
Agri-Mechanics	28	-	-	28
Agri-Forestry	4	-	-	4
Dressmaking	9	-	7	16
Food Processing	.	-	4	4
Baking	10	10	9	29
Tailoring	.	-	3	3
Sub-total	51	10	23	84
3. Secondary				
Vocational Agriculture	56	-	-	56
Home Economics	32	-	-	32
Special Agricultural Science	16	-	-	16
General Curriculum	102	-	-	102
Sub-total	206	-	-	206
4. Elementary	139	-	-	139
GRAND TOTAL				768

D. Curriculum Review and Development

The Institution has, for the period, revised some of its degree offerings/courses according to the Technical Panel for Agricultural Education (TPAE) standards.

The College of Agriculture (CA) has phased out the offering of Doctor of Veterinary Medicine to freshmen enrollees due to lack of financial resources and facilities. However, students of higher

levels were allowed to continue the course until they shall have graduated. The Veterinary Science Department serves as a strong supportive unit to the CA. The CA for the period, was able to offer new courses: Bachelor of Science in Agriculture major in Weed Science, Bachelor of Science in Agri-Business Management, and Bachelor of Science in Agricultural Economics. The latter degree course, however, did not materialize due to non-enrollment.

The College of Forestry (COF), on the other hand, has continuously arrived at a plan to comply with TPAE standards in all fronts. Joint efforts by MSAC Forestry Faculty and senior researchers from the Forest Research Institute in Baguio City were made. A Memorandum of Agreement was constructed to develop the COF as the center of higher learning insofar as forestry education in the region is concerned.

The College of Arts and Sciences (CAS) introduced curricular offerings based on TPAE standards for the Freshman curriculum in the following courses: Social Science 11 - Behavioral Science, Social Science 14 - Social and Political Thought, English 14 - Introduction to Literature, Humanities 11 - Introduction to Humanities, Biology 11 - General Botany, Biology 12 - General Zoology, Chemistry 11 - General Inorganic Chemistry and Chemistry 12 - Organic and Bio-Chemistry.

The Graduate School is ready for the offering of a new graduate program, Doctor of Philosophy (Ph. D.) in Agricultural Science major in Horticulture, Agricultural Education and Rural Development this First Semester, school year 1985-86. The offering of the new program

will be in consortium with the Saint Louis University (SLU), Baguio City. There are two (2) cognates for the Ph. D. courses: one cognate on professional course of 9 units shall be taken in SLU and the other cognate of 9 units shall be taken in MSAC.

E. Faculty Profile

1. Profile of Faculty by Ranks

<u>Rank</u>	<u>Number</u>
1.1 Full Professors	14
1.2 Associate Professors	14
1.3 Assistant Professors	54
1.4 Instructors	184

2. Profile of Faculty by Degree

<u>Degree</u>	<u>Number</u>
2.1 Ph. D./Ed. D.	22
2.2 MS/MA	89
2.3 BS/AB	155

F. Faculty Development

To meet the objectives on faculty development, the Institution has adopted a policy of sending ten (10) local scholars at a time to pursue higher degree courses - 3 for doctoral degrees and 7 for masteral degrees. These are in addition to those scholars supported by other agencies like the Colombo Plan, PCARRD, SEARCA, etc. The first batch started this school year 1984-85.

At present, there are 13 scholars for masteral degrees and 12 for doctoral degrees. Also, there are less than 64 faculty members who are pursuing graduate studies on their own with the College

giving thesis/dissertation assistance.

Since January this year, fourteen (14) members of the faculty including the President attended international conferences and training programs.

Table 4. Faculty/Staff Development Program by Specialization and by Institution and by Number Enrolled Under Scholarships

Program	Institution	No. Enrolled
Ph. D. in:		
Agricultural Economics	UPLB	1
Plant Pathology	UPLB	2
	Australia	1
Post Harvest	UPLB	1
Horticulture	GAUP	1
Soil Science	UPLB	1
	Queensland University, Australia	1
Animal Science	GAUP	1
Development Communication	UPLB	1
Agricultural Education	UPLB	1
Math Teaching	De La Salle University	1
MS in:		
Agricultural Economics	Xavier University	1
Agri-Business Management	UPLB	1
Entomology	UPLB	1
Public Health	UP Padre Faura	1
Microbiology	UST	1
Animal Science	Melbourne University, Australia	2
Plant Breeding	CLSU	1

Table 4. continued.

Program	Institution	No. Enrolled
Applied Science in Food Engineering	University of New South Wales	1
Food Science	UP Diliman	1
Sociology	UP Baguio	1
Chemistry	De La Salle University	1
Plant Pathology	UPLB	1

Table 5. Thesis Assistance Given to Faculty/Staff Pursuing Higher Education at Own Expenses

Program	Number	Amount (₱)
1. MS	7	₱ 3,000 each
2. Ph. D.	5	3,000 each

Table 6. Non-degree training courses attended by faculty/staff

Faculty Member	Conference/Training Program	Inclusive Dates
1. Aben, Silvestre	Training Course in Vegetable Production, Japan	July 1, 1983 - March 1, 1984
2. Atos, Marvin	Vegetable and Fruit Production, Observation Tour on Cooperative Marketing, leading educational institutions and trading centers, Japan	April 2-13, 1984

Faculty Member	Conference/Training Program	Inclusive Dates
3. Balaki, Edwin	Training Course on Agronomy for Potatoes in the Hot Tropics, Malaysia	Aug. 19-31, 1984
4. Pres. Fortunato A. Battad	Vegetable and Fruit Production, Educational/Observation Tour, Japan	April 2-13, 1984
5. Bayogan, Emma Ruth	Improved Storage Practices for Potato, Thailand	July 25-30, 1984
6. Luis, Ben	Training on Dairy Production, Improvement, Beef Fattening and Extension, Israel	May 2 - July 2, 1984
7. Merestela, Tessie	Educational Tour on Biological-Nitrogen Fixation, Japan	March 7-26, 1984
8. Ganga, Zenaida	a) 14th International Course on Applied Plant Breeding, Netherlands	March 17 - June 13, 1984
	b) 9th Triennial Conference of the European Association of Potato Research, Switzerland	July 1-9, 1984
9. Delson, Marcelino	a) Aspects of Non-University Higher Education, London	March 21-April 6, 1984
	b) Observation of the Cooperative Extension Services, U.S.A.	April 8-May 4, 1984
	c) Special Educational Programs for American Indians, U.S.A.	May 5 - June 4, 1984

Faculty Member	Conference/Training Program	Inclusive Dates
10. Sano, Elmo	Vegetable and Fruit Production, Educational/Observation Tour, Japan	April 2-13, 1984
11. Tad-awan, Bernard	Diploma in Tropical Sericulture, Mysore, India	April 1-Sept. 30, 1984
12. Toledo, Pepe	Vegetable Seed Production, AVRDC, Taiwan	Sept. 1, 1984 - Jan. 31, 1984
13. Dar, William	Fruit and Vegetable Production Study Tour, Taiwan	Nov. 25 - Dec. 2, 1984
14. Licudine, Danilo	Training in Chemistry, Japan	- On-going -

G. Student Services

a. Grants-In-Aid Program

For financially needy students, the College offers a number of financial assistance programs. These are MSAC Scholarship Program, MSAC Student/Graduate Assistantship, MSAC Alumni Scholarship, tuition fee discounts, and various scholarships and study grants sponsored by government, private companies and individuals.

b. Library Service

The College Library has an extensive collection of agricultural materials which include books, serials, theses and pamphlets.

c. Food Service

Meals and other food items at minimal cost are being served at the RSDC Cafeteria, old Home Economics Building and Engineering Building.

d. Health Service

The College maintains a medical and dental clinic which provide free service to all students.

e. Guidance and Counselling Service

The MSAC Guidance, Counselling and Testing Service sponsors occasional individual or group sessions that provides student outlets to express their problems relative to their educational, social and emotional needs. It also conducts psychological tests to help students develop better understanding of themselves.

f. Residence Hall

MSAC has two residence halls, the men's and ladies' dormitories that charge P50.00 a month per student. The men's dorm has a capacity of 150 students while the ladies' dorm can accommodate 200 students.

g. Physical Education and Athletic Services

The College has a spacious playground for track and field and an auditorium for basketball and volleyball.

h. Extra-Curricular Activities

For wholesome social attitudes of cooperation, responsibility, creativity and leadership, the College recognizes some extra or co-curricular organizations. These organizations

supplement the academic and vocational efficiency of every student.

LIST OF RECOGNIZED STUDENTS' ORGANIZATIONS/CLUBS

A. Techno-Clubs/Societies

1. Agro-Horticultural Society
2. Agricultural Chemistry
3. Kapisanan Ng Agham Panlipunan (KAP)
4. Applied Math-Physics Society
5. Future Forester's Society (FFS)
6. Soil Science Society (SSS)
7. Veterinary Science Club (VSC)
8. Phil. Society of Agricultural Engineers (PSAE)
9. Future Agri-Business Managers Integrated Services Association, Incorporated
10. Future Agricultural Homemakers of the Philippines (FAHP)
11. Society on Weed Sciences, Entomology and Plant Pathology (SWEPP)

B. Community Production-Oriented Campus Organizations:

1. Kabataang Barangay (MSAC Chapter)
2. Youth Community Service Club (YCSC)

C. Extra-Curricular Organizations/Clubs

1. Supreme Student Council (SSC)
2. Glee Club
3. Campus Crusade for Christ (CCC)
4. College Association for Research Principle (CARP)
5. Future Farmers of the Philippines, College Chapter (FFP)
6. Future Agricultural Educators Society (FAGES)
7. Student Pastorate Council (SPC)
8. College Y (YMCA)
9. Agricultural Disseminator's Club
10. Highland Cultural Troupe
11. CMT Spearhead Unit
12. MSAC Highland Youth Cultural Society
13. Lakas Angkan Disciple Making Movement
14. National Grantees' & Scholar's Organization

Table 7. Summary of Scholarship/Grants to Undergraduate Students

Scholarship/Grants	: Number of Scholars/Grantees
1. Philippine Development Scholarship Program (PDSP), University of Life	8
2. National Food and Agricultural Council (NFAC)	2
3. Study-Now-Pay-Later-Plan (SNPLP)	75
a. Government Service Insurance System	16
b. Land Bank	2
c. Development Bank of the Philippines	2
d. Philippine National Bank	29
e. Social Security System	26
4. National Integration Study Grant Program (NISGP)	20
5. State Scholarship Program (SSP)	1
6. Selected Ethnic Group Educational Assistance Program (SEGEAP)	7
7. Benguet Foundation Incorporated (BFI)	1
8. Administrative Grant	123
a. Highland Cultural Troupe	27
b. Glee Club	35
c. Citizen Military Training	17
d. Student Supreme Council	12
e. Athletes	2
f. Rondalla	10
g. Mini-Band	20
9. Barangay Scholars	154
TOTAL	391

Table 8. List of Student Services & Number of Students Served,
SY 1984-1985

Student Services	Number of Students/Cases Served
1. Placement Office	1,801
a. Occupational Information Services	404
b. Career/Employment Counselling	232
c. Placement Referrals	207
d. Placement Seminars/Workshops	434
e. Follow-up, Research and Evaluation of Graduates from 1980-1984	464
2. Guidance and Counselling Office	5,058
a. Counselling Services	1,715
b. Testing Services	1,004
c. Home Visitation/Hospital Referrals Services	22
d. Information Services	1,170
e. Inventory (Personnel Data Forms and Character References)	1,147
3. Residence Halls/Dormitories	399
a. Men's Residence Hall	109
b. Ladies' Residence Hall	290
4. Health Services Office	1,792
a. Students treated	1,096
b. Faculty & employees treated	619
c. Referrals to outside agencies	60
d. Outsiders treated	17
TOTAL	9,050

Table 9. Library Acquisition, January to December, 1984*

I t e m	:	Total Number of Volumes/ Titles
Books		1,198
Serials		68
TOTAL		1,266

*This total number of books and serials were received by the Main Library through purchases as well as gifts from various sources. Among the donors of books and other publications were the NSTA, USIS, Asia Foundation (Phils.), British Council, UPLB units, PCARRD, Peace Corps Volunteer, PLMP-Albasa Corporation and MSAC Alumni.

H. The Colleges

Nature

Six academic units have been organized. Some are reconstituted from existing institutes and departments.

1. College of Agriculture (CA). The College provides the lead in instruction, research, extension and development in the animal, plant and soil sciences, in crop and animal protection, and in agricultural economics and agribusiness management. It provides foundation instruction in agriculture-based curricular programs and the applied research inputs for MSAC's technology development programs.

The College has eight (8) departments on: animal science, veterinary science, agronomy, horticulture, soil science, crop protection, agricultural economics, and agribusiness management.

2. College of Forestry (COF). The College offers a bachelor's program in forestry and non-degree forest ranger course, also a curriculum in agro-forestry, a masteral program in forestry for professionals, and a master of science degree in forestry with majors in watershed management, forest ecology, silviculture, range management, fire science and forest entomology and pathology. Five departments compose the COF: forest biology, forest resources management, wood science and technology, social forestry, and agro-forestry.

3. College of Arts and Sciences (CAS). The College provides the liberal education curriculum for all academic programs and offers separate fields of specialization in the Arts and Sciences. It has seven academic departments: biology, mathematics, statistics

and physics; chemistry; social sciences; development communications; and geology.

4. College of Teacher Education (CTE). The College was formed by merging the present Institute of Teacher Education and the Department of Home Technology. Five departments (home economics education, foods and nutrition, clothing technology and related arts, comprehensive high school and elementary education) provide the instructional programs for the curricular offerings in the Bachelor of Science in Home Economics (major in home economics education, or nutrition and dietetics or clothing technology) and the Bachelor of Science in Agricultural Education degrees. The high school and elementary school serve as the training laboratories for the education majors. The Comprehensive High School has a common curriculum for the first and second years but emphasis splits (one in science and the other in agriculture) in the third and final years.

5. College of Applied Engineering and Technology (CAET). This College is a product of the merging of the Department of Applied Engineering and Agri-Mechanics and the post-harvest division of the Horticulture Department. It has four departments: Agri-Mechanics, Post-harvest Technology, Soils and Water Resources, and Agricultural Machinery and Structures. A degree program in Post-harvest Technology is added to the present BS Agricultural Engineering and Agri-Mechanics offerings.

6. The Graduate School (GS). It is responsible for coordinating the graduate degree programs, ensuring high standard in the graduate curricula, and promoting scholastic excellence of the graduate

faculty. The long-range plan of MSAC is to increasingly offer relevant graduate degree programs in various areas of study. This is in keeping with the objective of turning out highly trained professionals who will take the lead role in the development and management of highland resources.

RESEARCH

The Institution does its part in the expansion of knowledge and technology through an interdisciplinary, inter-unit and multi-functional research strategy. Researches are in response to national, regional and local needs, expected to be practical, applicable and profitable that should have direct contributions to the improvement of food production, human and natural resources development, and ecological balance.

A new research orientation has been adopted from the approved Six-Year Development Plan where a research and development support services unit has been created. MSAC strives to develop innovations that can be employed to uplift the quality of life of the people in the highland region in particular and the nation in general.

The research programs now include technology refinement as a major activity in the technology development process. To tailor technology to the unique requirements and ecological systems of the highlands, resource conservation and management studies have been given special emphasis while the socio-economic aspects of research were strengthened and assimilated into the technology refinement stage of the Research and Development (R & D) process.

MSAC's priorities and research objectives, are in line with those embodied in the NEDA and PCARRD programs.

A. RESEARCH BREAKTHROUGHS GENERATED BY THE INSTITUTION

1. Hybrid seed production of potato
2. True potato seeds (TPS) as planting materials
3. Potato stem cuttings as planting materials

4. Apple production
5. Semi-temperate fruit tree culture
6. Agro-forestry involving coffee trees planted under pine stands
7. Strawberry production

B. COMPLETED RESEARCHES

NORTHERN PHILIPPINES ROOT CROPS RESEARCH AND TRAINING CENTER

<u>Completed Researches</u>	<u>Researcher(s)</u>	<u>Funding Agency</u>
1. Variety Trials of White Potato Under La Trinidad, Benguet Conditions	E.O. Badol, et. al	NPRCRTC/MSAC
2. Variety Yield Trial on Potato Stem Cutting	E.O. Sano E.C. Gonzales	NPRCRTC/MSAC
3. Potato Yield Trial Under Benguet Conditions	E.O. Badol	NPRCRTC/MSAC
4. Progeny Evaluation Under Field Conditions	S.T. Gayao, et. al	NPRCRTC/MSAC
5. Hybrid Seed Production of Potatoes (<u>Solanum spp.</u>)	Z.N. Ganga, et. al	NPRCRTC/MSAC
6. Evaluation of Potato (<u>Solanum spp.</u>) Cultivars for Yield and Resistance to <u>Phytophthora Infestans</u> in the Philippine Highlands	Z.N. Ganga, et. al	NPRCRTC/MSAC
7. Study on the Different Methods of Fertilizer Applications	J.L. Tukaki W.L. Marquez	NPRCRTC/MSAC
8. Incidence and Severity of Bacterial Wilt (<u>Pseudomonas Solanaceum</u>) and Late Blight (<u>Phytophthora infestans</u>) as Influenced by Different Organic Fertilizers	A.A. Basalong R.B. Contada M.B. Babac	NPRCRTC/MSAC

<u>Completed Researches</u>	<u>Researcher(s)</u>	<u>Funding Agency</u>
9. Price Monitoring of Root Crops and Other Selected Vegetables in Baguio	-	NPRCRTC/MSAC
10. Evaluation of White Potato Production in La Trinidad, Benguet	-	NPRCRTC/MSAC
11. Economic Evaluation of Some Commonly Used Fungicides for the Control of Potato Late Blight	E.O. Badol, Et. al	NPRCRTC/MSAC
12. Growth and Yield of Fina and Cosima Stored Under Dark and Diffused Light at Four and Seven Months Storage	E.R.V. Bayogan, et. al	NPRCRTC/MSAC
13. Variety Evaluation or Breaking Dormancy of Potato with Chemicals	E.R.V. Bayogan V.B. Salda	NPRCRTC/MSAC
14. Cost and Return Analysis of White Potato Production in Comparison with Other Vegetable Crops Properly Grown in Benguet	B.T. Gayao, et. al	NPRCRTC/MSAC
15. Assessment of Losses in Carrots, White Potatoes, and Sweet Potatoes During Harvesting Under La Trinidad Conditions	E.R.V. Bayogan V.B. Salda	NPRCRTC/MSAC
16. Cost and Return Analysis of White Potato Production in La Trinidad Valley	B.T. Gayao, et. al	NPRCRTC/MSAC
17. Fertilizer Rate Studies on White Potato	J.L. Tukaki W.L. Marquez	NPRCRTC/MSAC
18. Study on the Effects of Liming White Potato	J.L. Tukaki W.L. Marquez	NPRCRTC/MSAC
19. Effect of Thinning (Number of Stems Per Hill) and Distance of Planting on the Yield of Potato	-	NPRCRTC/MSAC

<u>Completed Researches</u>	<u>Researcher(s)</u>	<u>Funding Agency</u>
20. Trial Spraying of Albatross on White Potato	-	NPRCRTC/MSAC
21. Variety Evaluation on Breaking Dormancy of Potatoes with Chemicals	-	NPRCRTC/MSAC
22. Yield Evaluation of Various Curing Methods in Potatoes	-	NPRCRTC/MSAC
<u>TARO</u>		
1. Preliminary Study on the Distance and Depth of Taro in the Highlands	A.A. Basalong	NPRCRTC/MSAC
2. Preliminary Studies on the Storability of Taro Corms		NPRCRTC/MSAC
<u>SWEET POTATO</u>		
1. Assessment of Losses in Carrots, White Potatoes, and Sweet Potatoes During Harvesting Under La Trinidad, Benguet Conditions	E.R.V. Bayogan V.B. Salda	NPRCRTC/MSAC
2. Yield Evaluation of Some Sweet Potato Hybrids Under Highland Conditions	I.C. Gonzales E.O. Sano	NPRCRTC/MSAC
3. Storability of Sweet Potatoes in the Highlands	-	NPRCRTC/MSAC
4. Cost and Return Analysis of White Potato Production in Comparison with Other Vegetable Crops Properly Grown in Benguet	B.T. Gayao	NPRCRTC/MSAC
<u>OTHERS</u>		
1. Assessment of Stem Cutting Production From Different Sources of Mother Plant	P.A. Dalang C.B. Guitelen	NPRCRTC/MSAC
2. Varietal Evaluation of Selected Potato Cultivars	C.B. Guitelen P.A. Dalang	NPRCRTC/MSAC

<u>Completed Researches</u>	<u>Researcher(s)</u>	<u>Funding Agency</u>
3. Preliminary Density Study on Rooted Stem Cutting	P. A. Dalang C.B. Guitelen	NPRCRTC/MSAC
<u>COLLEGE OF AGRICULTURE</u>		
1. Efficacy of Various Nematodes for the Control of Potato Nematodes	L.M. Villanueva	FMC International
2. Efficacy of Various Nematodes Attacking Tomato	L.M. Villanueva	- do -
3. Fungicide Trial Against Baguio Bean Rust	L.M. Villanueva	Hoechst
4. Insecticide Efficacy Trial Against Potato Pests	E.V. Cardona	Union Carbide
5. Insecticide Efficacy Trial Against Potato Pests	E.V. Cardona	CIBA-GEIGY
6. Insecticide Efficacy Trial Against Tomato Pests	E.V. Cardona	DOW Chemical
7. Marketing Study of Cut-flowers and Foliage Ornaments in Baguio City and Its Vicinity	D.D. Tagarino	SEARCA
8. Response of Cabbage to Boron Application	P.B. Alipit	Planters Products
9. Nitrogen Fertilizer Study on Cabbage and White Potato	P.B. Alipit	Fertilizer Marketing
10. The Influence of Ripening Season on the Locality of Satsuma Orange and Japanese Summer Grape Fruit	A.C. Tipayno	MSAC
11. Adaptability Trial of Washington Navel Orange in La Trinidad	A.C. Tipayno	MSAC

<u>Completed Researches</u>	<u>Researcher(s)</u>	<u>Funding Agency</u>
12. Effect of Intercropping Baguio Bean and Garden Pea on Initial Growth of Four Citrus Cultivars	A.C. Tipayno	MSAC
13. Growth and Flower Improvement of <u>Chrysanthemum morifolium</u> as Affected by Growth Retardants and Supplementary Lighting	B.D. Ladilad	MSAC
13.1 Effect of the Different Kinds of Growth and Flowering of Mums	B.D. Ladilad	MSAC
13.2 Comparative Effects of the Different Frequency Retardants Application on the Flowering of Mums	B.D. Ladilad	MSAC
13.3 Comparative Effects of the Irradiation on the Growth and Flowering of Mums	B.D. Ladilad	MSAC
14. Cost and Return Analysis of <u>Chrysanthemum</u> Under Field Conditions	B.D. Ladilad A.G. Ladilad	MSAC
15. Flower Induction and Seed Production of Chinese Cabbage, Cauliflower and Carrots	P.E. Toledo	MSAC
16. Nutritive Evaluation and Adaptation of <u>Solanum nodifolium</u>	P.E. Toledo	MSAC
17. MSAC Orna-Flori Research and Development Program	B.D. Ladilad	MSAC
17.1 Cost and Return Analysis of Anthurium	B.D. Ladilad A.G. Ladilad	MSAC-NFAC
17.2 Cost and Return Analysis of Roses	B.D. Ladilad F.R. Gonzales	MSAC-NFAC

<u>Completed Researches</u>	<u>Researcher(s)</u>	<u>Funding Agency</u>
17.3 Cost and Return Analysis of Shasta Daisy	B.D. Ladilad F.R. Gonzales	MSAC-NFAC
17.4 Variety Trials on Chrysanthemum	B.D. Ladilad F.R. Gonzales	MSAC-NFAC
18. Evaluation of F-3825 Against Root Knot Nematodes on Potatoes	L.M. Villanueva	FMC-International
19. Efficacy of Various Fungicides for the Control of Potato Leaf Blight	L.M. Villanueva	ALDIZ-Inc.
20. Insecticide Efficacy Trial Against Cabbage Pest	E.V. Cardona, Jr.	DOW Chemical
21. Insecticide Efficacy Trial Against Cabbage Pest	E.V. Cardona, Jr.	Hoechst

RESEARCH AND TECHNOLOGY REFINEMENT

VEGETABLE CROPS

- | | | |
|---|-------------|------|
| 1. Vegetable Performance Evaluation of Japanese Varieties | P.B. Alipit | MSAC |
| 2. Yield Evaluation of Some Chinese Cabbage Cultivars During the Rainy and Dry Season | L.B. Victor | MSAC |

MACRO-ECONOMICS

- | | | |
|---|--------------|--------|
| 1. Resource Utilization, Farmer's Expectations, Risk Aversions in the Highlands | M.B. Mercado | PCARRD |
|---|--------------|--------|

FRUIT CROPS

- | | | |
|---|-------------|-------------|
| 1. Evaluation of Different Weed Control Methods in Strawberry | E.T. Balaki | MSAC/PCARRD |
|---|-------------|-------------|

FARMING SYSTEM

<u>Completed Researches</u>	<u>Researcher(s)</u>	<u>Funding Agency</u>
1. Water Cropping Selected Vegetables with Mulberry Trees	G.G. Bilango	MSAC/PCARRD
2. Survey, Identification and Qualification of Factors Associated with the Success of Farming Systems in the Highlands	M.B. Mercado	PCARRD

APPLIED RURAL SOCIOLOGY

1. Agro-technology Transfer in Ethno-Communities	C.C. Consolacion	PCARRD
--	------------------	--------

COLLEGE OF TEACHER EDUCATION

1. Causes of Student Difficulties in Classroom Participation	-	BSAE
2. Preservation of Highland Fruits	R.C. Abastilla	BSHE
3. Folklore of TAE Ethnic Tribes of the Mountain Provinces	J.P. Bagano	Secondary Dept.

GRADUATE SCHOOL

<u>Thesis Title</u>	<u>Researcher</u>
1. N-P ₂ O ₅ Fertilization and Depth of Soil Moisture in Relation to Nutrient of Garlic	C.M. Cabansag
2. The Effects of Feeding Varying Levels of Sorghum and Corn Combined with Commercial Broiler Mash on the Performance of Two Broiler Strains	H.C. Licay
3. Influence of Tillage Practices on Nutrient Uptake and Yield of Different Garlic Strain	D. Simon

<u>Thesis Title</u>	<u>Researcher</u>
4. Performance of Peterson and Cobb given Seaweed and Ipil-ipil as Feed Supplement	J. Libong
5. A Case Analysis of the Special Extension Projects of MSAC	E. Singa
6. The Effects of Carbaryl 1 Naphthyl 1 N-Methyl Carbamate and Ethylene Bisthio-Carbamate Iron and Inoculation on Cowpea (Vigna Genensis Linn)	M. Aban
7. Varietal Performance of Chinese Cabbage Varieties Using AVRDC and Local Highland Cultural Practice	F. Borja
8. Response of Mango to Various Potassium Nitrate Concentration and Foliar Fertilizer Application	M. Buenafe
9. Agri-Technology Adoption Process in Three Ethnic Villages of Mt. Province	L. Consolacion
10. Attitudes Towards Clothing Styles of Female College Students at MSAC	P. Lacanaria
11. The Reproductive Performance of the Two Breeds of Rabbit Fed with Different Kinds of Green Forage	A. Kub-aroon
12. Effect of Biostimulation on the Development and Severity of White Potato Major Diseases	J.S. Ligat
13. Characteristic and Variability Evaluation of Garden Peas in Two Different Seasons	M. Melvelyn

<u>Thesis Title</u>	<u>Researcher</u>
14. The Effects of the Different Rates of Organic and Inorganic Fertilizers on the Growth and Yield of White Potato	E. Pera
15. Influence of Cultivars and Degree of Ripeness of Strawberry on Preserve Yield	M.C. Porte
16. Influence of Planting Pattern, Intercropping System and Intercrop on Yield of Corn and Mungo	D. Ringor.
17. The Use of Fermented Plant and Animal By-products in Growing Finishing Hog Rations	R. Tibig
18. The Management Practices of Swine Raisers in Benguet	D. Wagang

C. ON-GOING RESEARCHES

NORTHERN PHILIPPINES ROOT CROPS RESEARCH AND TRAINING CENTER

<u>On-Going Researches</u>	<u>Researcher(s)</u>	<u>Funding Agency</u>
1. Germplasm Evaluation to Identify High Yielding and Resistant Varieties	Z.N. Ganga, et. al	NPRCRTC/MSAC
2. Development of TPS Progenies (Hybridization) and Clonal Selection	Z.N. Ganga, et. al	NPRCRTC/MSAC
3. Rapid Multiplication of Promising Cultivars	Z.N. Ganga, et. al	NPRCRTC/MSAC
4. On-Farm Trials of Selected Promising Cultivars	Z.N. Ganga, et. al	NPRCRTC/MSAC
5. Economic Evaluation of Commonly Used Fungicides Against Late Blight (<i>Phytophthora infestans</i>) in Benguet	J.C. Perez, et. al	NPRCRTC/MSAC
6. Incidence and Severity of Bacterial Wilt and Late Blight as Influenced by Different Organic Fertilizers, Cropping Pattern, and Soil Management	J.C. Perez, et. al	NPRCRTC/MSAC
7. Price Monitoring of Root Crops and Other Selected Vegetables in Baguio, Benguet	B.T. Gayao L.T. Delson	NPRCRTC/MSAC
8. Yield Evaluation of Various Curing Methods in Sprouted Potatoes	E.V. Bayogan, et. al	NPRCRTC/MSAC
9. Effect of Netting During Storage of Aphid Infestation	E.V. Bayogan, et. al	NPRCRTC/MSAC
10. Bulkhandling in Potatoes	E.V. Bayogan, et. al	NPRCRTC/MSAC

<u>On-Going Researches</u>	<u>Researcher(s)</u>	<u>Funding Agency</u>
11. Organic Fertilization of Root Crops	J.L. Tukaki	NPRCRTC/MSAC
12. Comparative Study of Recent Fundings on N, P, and K Requirements of White Potato	J.L. Tukaki	NPRCRTC/MSAC
13. Weed Control Management Study on White Potato	E.T. Balaki	NPRCRTC/MSAC
14. Mulch Study on White Potato Production on Mid-Elevation Condition	E.T. Balaki	NPRCRTC/MSAC
15. Effect of Bronze on the Growth and Yield of White Potato	E.T. Balaki	NPRCRTC/MSAC
16. Price Monitoring of Root Crops and Other Selected Vegetables in Baguio	B.T. Gayao	NPRCRTC/MSAC
17. An Inquiry on the Prices of Farm Inputs Needed in Vegetable Production for the Last 10 Years	B.T. Gayao	NPRCRTC/MSAC
18. Establishing the Viability of Seed Potato Production Through Stem Cutting Rapid Multiplication Technique	B.T. Gayao	NPRCRTC/MSAC
19. Survey on the Profitability of White Potato Production in the Lowlands	B.T. Gayao	NPRCRTC/MSAC
20. Fertilizer Study on Problematic Soils in Hillside Farming	W.L. Marquez	NPRCRTC/MSAC

TARO

1. Seasonal Fluctuations, Ecological Succession, and Identification of Pest and Diseases of Sweet Potato and Taro in the Highlands	J.C. Perez	NPRCRTC/MSAC
2. Storability Study	E.R.V. Bayogan	NPRCRTC/MSAC

<u>On-Going Researches</u>	<u>Researcher(s)</u>	<u>Funding Agency</u>
SWEET POTATO		
1. Germplasm Collection, Maintenance and Multiplication	Z.N. Ganga, et al.	NPRCRTC/MSAC
2. Plant Density Study on Sweet Potato	I.T. Gonzales	NPRCRTC/MSAC
3. Varietal Evaluation for High Yields, Resistance, and Adaptation in the Highland	Z.N. Ganga	NPRCRTC/MSAC
4. Storability Study in Sweet Potato	E.R.V. Bayogan	NPRCRTC/MSAC
5. Utilization Studies	E.R.V. Bayogan	NPRCRTC/MSAC
6. Seasonal Fluctuation, Ecological Succession, and Identification of Pests and Diseases of Sweet Potato and Taro in the Highlands	J.C. Perez	NPRCRTC/MSAC
7. An Inquiry on the Seasonal Supply and Prices of Important Vegetable Crops Grown in the Highlands	B.T. Gayao, et al.	NPRCRTC/MSAC

RESEARCH AND TECHNOLOGY REFINEMENT

VEGETABLE CROPS

1. Flower Induction and Seed Production of Chinese Cabbage, Cauliflower, and Carrots	P.E. Toledo F.R. Gonzales	MSAC
--	------------------------------	------

<u>On-Going Researches</u>	<u>Researcher(s)</u>	<u>Funding Agency</u>
2. Regional Evaluation Trials in Crucifers and Solanaceous Crops	P.E. Toledo S.L. Kudan	PCARRD/MSAC
3. Integrated Vegetable Research	P.B. Alipit	MSAC
4. Mushroom Research and Development Program	P.B. Alipit L.M. Villanueva	MSAC
5. Crop Protection Studies on Selected Highland Vegetables	E.V. Cardona, et. al	PCARRD
6. Garden Pea Coordinated Research Program		MSAC
6.1 Coordinated Research on Cultural Management of <u>Pisum sativum L.</u>	W.D. Dar, et. al	MSAC
6.2 Studies on the Rhizobium on <u>Pisum sativum</u> Symbiosis	T.M. Merestela, et. al	MSAC
6.3 Crop Protection Studies on Pest and Disease of Sweet Pea	E.V. Cardona, et. al	MSAC
6.4 Some Physiological Studies on Sweet Peas in Relation to Seed Production	J.L. Lirio, et. al	MSAC
7. Applied Seed Production Studies for Low, Medium, and High Elevations	W.D. Dar	PCARRD/MSAC
AGRO-FORESTRY		
1. Agro-forestation Special Project	B.B. Dimas	
FARM RESOURCES AND SYSTEMS		
1. Improvement and Development of Farming Systems in Highland Area	W.D. Dar	MSAC

<u>On-Going Researches</u>	<u>Researcher(s)</u>	<u>Funding Agency</u>
2. Soil and Water Conservation and Management in Agro-forestry Areas	T.M. Merestela	MSAC
3. Establishment of Farming Systems Involving Semi-temperate Fruit Trees and Vegetables on Sloping Areas of Benguet	J.G. Balaoing	PCARRD/MSAC
4. Cropping Schemes Involving White Potato and Gabi	W.D. Dar, et. al	PCARRD/MSAC
5. Azolla Research Project	T.M. Merestela	UPLB-CA/MSAC
6. Cropping in Acid Soils	T.M. Merestela	BS/MSAC

COLLEGE OF AGRICULTURE

1. Ecological Succession of Major Pest in Selected Highland Vegetables and Fruits	E.V. Cardona	PCARRD
2. Identification, Isolation and Purification of Viruses Attacking Crucifers and Cucurbits	J.S. Luis A.F. Bulacso	PCARRD
3. Biology and Control of <u>Maloidogyne incognita</u> in Tomato and Celery	S.P. Milagrosa L.M. Villanueva	PCARRD
4. Studies on Soft Rot Diseases of Cabbage, Chinese Cabbage and Lettuce	J.S. Luis A.B. Loy-od	PCARRD
5. Crop Protection Studies in Sweet Pea	E.V. Cardona L.M. Villanueva	MSAC
6. Insect Pest Management of Sweet Potato in the Highland	L.M. Colting	PCARRD
7. Survey on Insect Pests and Diseases of Carrots	L.M. Villanueva L.M. Colting	PCARRD
8. Control of Pineapple and Banana Nematodes Under Greenhouse Conditions	L.M. Villanueva	DOW-CHEM.

<u>On-Going Researches</u>	<u>Researcher(s)</u>	<u>Funding Agency</u>
9. Mushroom Research and Production Project	L.M. Villanueva J.S. Cadaweng	MSAC
10. Utilization of Insects as Human Food	L.M. Colting	MSAC
11. Survey and Efficacy Test of Local Plant Extracts Against Some Major Insect Pests of Vegetables and Root Crops in the Fields and Storage	L.M. Colting	MSAC
12. Survey and Verification of Crop Protection Practices of Farmers	L.M. Colting	MSAC
13. Screening of Insecticide Against Diamondback Moth	L.M. Conting	Hoechst
14. Screening of Insecticide Against Diamondback Moth	L.M. Colting	CARFI
15. Asparagus Research and Production Project	T.M. Merestela J.G. Balaoing M.M. Marquez	MSAC
16. Potential of Wild Sunflower as an Organic Fertilizer	M.D. Pandosen T.M. Merestela	MSAC
17. Biology and Culture of Azolla	T.M. Merestela	MSAC-UAP
18. Effects of Lime and Chicken Manure on Some Physiological Properties of the Soil	T.M. Merestela	MSAC-BS

COLLEGE OF ARST AND SCIENCES

1. Physiological Studies on Sweet Pea	L.G. Lirio	Dept. of Biology
2. MSAC Vermiculture Project (Life Cycle and Biology of Earthworms)	E.C. Bestre	Dept. of Biology

<u>On-Going Researches</u>	<u>Researcher(s)</u>	<u>Funding Agency</u>
3. A Study on Foliar Fertilizer	E.C. Bestre	Department of Biology
4. Virulence of the Pathogenic Bacterial Flora of <u>Bombyx Mori</u> L. under La Trinidad Conditions	A.T. Mioten	Department of Chemistry
5. Chemical Investigation of the Nutritive Values of Amaranth Plants	T.G. Villanueva	Department of Chemistry
6. Spanish Word Cognates in Ilocano, Kan-kana-ey and Ibaloi	R.E. Monroe, Jr. J. D. Botacion	Department of Humanities
7. Pangangalap ng mga Piling Babasahin na Gagamiting Lundayan sa Komposisyon		Pilipino Section
8. Pilipino Cognates in Ibaloi	E. Bayangan	Department of Humanities
9. Qualifications of Language Teachers and their Teaching Competencies as Perceived by Students	E.R. Hufana D.P. Dimas	Department of Humanities
10. Spanish Morphological and Semantic Borrowings in Pangasinan, Ibaloi and Kan-kana-ey	R.E. Monroe, Jr. J.D. Botacion R.S. Gualdo	Department of Humanities

D. PROPOSED RESEARCHES

COLLEGE OF AGRICULTURE

<u>Proposed Researches</u>	<u>Researcher(s)</u>	<u>Funding Agency</u>
1. Crop Protection Studies on Selected Vegetables in the Highlands	L.M. Villanueva L.M. Colting E.V. Cardona	ACIAR
2. Evaluation of Some Fungicides for the Control of <u>Phytophthora infestans</u> Attacking Potato (Wet Trial)	L.M. Villanueva	Hoechst
3. Crop Protection Studies on Arabica Coffee in the Highlands	L.M. Villanueva, et. al	PCARRD
4. Development of Integrated Management Strategies for Problem Pests of Selected Highland Fruits and Vegetables	L.M. Villanueva, Project Leader	PCARRD

COLLEGE OF ARTS AND SCIENCES

1. Medicinal Plants in the Highlands	Department of Biology
2. Microbiological Quality of the Water at Balili River	Department of Biology
3. Chemical Analysis of the Water at Balili River	Department of Biology

RESEARCH AND TECHNOLOGY REFINEMENT

The research and technology refinement unit prepared and submitted the following proposals for funding:

<u>Commodity</u>	<u>Number of Proposals</u>
1. Vegetable Crops	7
2. Fruit Crops	11
3. Ornamental Crops	1
4. Farming Systems	1

<u>Commodity</u>	<u>Number of Proposals</u>
5. Food and Nutrition	1
6. Energy and Fertilizer Development	1
7. Socio-Economics	4

E. SPECIALIZED RESEARCH UNITS

1. Northern Philippines Root Crops Research and Training Center (NPRCRTC)

Based at MSAC, the NPRCRTC has been established to spearhead, coordinate, plan, implement, and monitor root crops research and conduct trainings designed for the development of Northern Philippines, especially in the depressed areas where root crops are the main food crops. Another function is to develop and disseminate technological information on root crops production, storage, processing, and utilization techniques.

Specifically, researches being undertaken by the NPRCRTC are on white potato, sweet potato, and taro.

The Center has six (6) sections carrying out specific functions. Such are the crop management section, crop improvement section, crop protection section, socio-economics section, post harvest handling section, and training and extension section.

Aside from the R & D activities, some of the staff have attended trainings and have been granted scholarships as part of the Center's manpower development program.

SECTIONS:

Crop Improvement. The main function of the section is to develop high yielding, good quality and pest resistant varieties of potato, sweet potato, gabi (taro) and other root crops. Researches were concentrated on the evaluation of germplasm to identify and select cultivars suited for the highland conditions. Hybridization ward on white potato is one of its major activities, which aims to develop new cultivars and superior TPS Progenies.

Crop Management Section. The main objective of this section is to develop improved cultural management practices for root crops. The section also assists in the training and extension program of the Center.

Crop Protection Section. This section is obliged to monitor root crop diseases and insect pests, particularly in white potato. It helps farmers diagnose and identify diseases and insect pests that are not known or uncertain.

Postharvest Technology Section. Its function is to conduct studies on postharvest handling, marketing and processing for human food, animal feed, fuel and other industrial uses. It conducts specific studies in the field and in the laboratory.

Socio-Economics Section. Its primary function is to provide useful information, identify research gaps, evaluate farmers' acceptance of research recommendations, assist in the economic assessment of researches and formulation of viable project studies.

Training and Extension Section. Its main thrust is to extend the technology generated by the Center to the farmers, student specialists and extension workers in the form of farm demonstration, job training, and workshop seminars.

Seed Production Section. Through rapid multiplication studies, this section aims to generate and extend useful and beneficial technology to meet the needs of local potato growers.

Agri-Business Project. Its main function is to apply into actual commercial production the technology generated by the researchers and be the basis of evaluation of research results.

Accomplishments of NPRCRTC for the year were already mentioned on the first part of the research component.

2. Highland Agricultural Research Center (HARC)

The Highland Agricultural Research Center (HARC), based at its lead agency, the Mountain State Agricultural College (MSAC), was established in November 1978 by virtue of a Memorandum of Agreement among the Philippine Council for Agriculture and Resources Research and Development (PCARRD), the National Economic and Development Authority (NEDA), and MSAC.

Primarily established to serve the research and development needs of highland agriculture, HARC's major functions are to plan, coordinate, implement, and monitor agricultural researches supportive to the development of the Mountain Provinces and other highland areas of the country. Besides technology generation and development, HARC performs technology packaging and dissemination of research results via applied communication

channels. Moreover, HARC undertakes manpower development programs for its researchers and technical staff.

As a regional research center, HARC coordinates with the following agencies: the Baguio Experiment Station (BES) and the Baguias Experiment Station (BuES) of the Bureau of Plant Industry (BPI), the West Central Luzon Forest Research Center (WCLFRC) of the Forest Research Institute (FORI), the Baguio Dairy Farm (BDF) of the Bureau of Animal Industry (BAI), the Cordillera Studies Center (CSC) of the University of the Philippines at Baguio (UPCB), the Northern Philippine Root Crops Research and Training Center (NPRCRTC), the Silk Industry Development Project (SIDP) of the Philippine Textile Research Institute (PTRI), the Ministry of Agriculture and Food (Regions I & II), the Kalahan Education Foundation (KEF), PCARRD, and MSAC.

HARC'S SPECIAL PROGRAMS

A. Highland Rural Development Program (HRDP)

With funds coming from the Ford Foundation, the HRDP was formally launched in late December, 1983, intensifying countryside transformation through an effective technology generation, verification, and utilization scheme. As such, the program helps marginal farmers increase their productivity and improve their standard of living from mere subsistence to self-sufficiency.

Activities and Accomplishments:

1. Research and Extension

- Conducted a "Research and Development Needs Survey" to identify the priority needs of Benguet farmers with regards their agricultural activities and their proposed solutions to the problems. The survey was administered in five farming municipalities in Benguet as follows: Atok, Buguias, Kapangan, La Trinidad, and Tublay.
- Established a "Village Research and Demonstration Laboratory (VRDL)" in Natublung, Buguias, Benguet. This is a technology verification and demonstration farm where technologies generated at MSAC are being tested side by side with existing farmer's technologies. An area of about two-thirds of a hectare is presently planted to potatoes and carrots.
- Verification of technology recommendations contained in the "Potato Technoguide" has been done in farmer-cooperator's farms in Benguet, specifically in Sayangan, Atok, and Natublung, Buguias. The study shows satisfactory results and target yield of 28 tons per hectare has been attained.

2. Demonstration Farms

- Three (3) demonstration farms in areas representing different geographical characteristics in Benguet were established. Two demonstration farms were established in Tabagao, Kapangan, Benguet, a barangay endowed with a comparatively warm climate. These were planted to Arabica coffee intercropped with existing fruit trees along mountainous areas.

Another demonstration farm, a mountain terrace type has been planted Arabica Coffee in Caliking, Atok. Except for a number of trees damaged by typhoons, all the trees are generally performing well.

3. Training and Manpower Development

- Three (3) MSAC personnel have received HRDP scholarship grants. Thesis assistance has been extended to a graduate student whose study is relevant to the HRDP program.

4. Special Project

Swine Dispersal is a special project for selected farmers who attended the seminar-workshop on "Package of Applicable Technology on Swine Production" held at the RTC-RD on July 18-25, 1984. Each farmer was given one piglet as loan. For the continuity of the project, it was required that the farmers disperse all female litters during the 1st and 2nd farrowing to other identified farmer-cooperators, while the male litters shall be returned to the project for distribution to other cooperators.

B. Benguet-Mountain Province Technology Packaging for Countryside Development (TECHNOPACK)

Since 1981, this has been conceived and made operational in response to the inaccessibility and lack of technology recommendations on major commodities. Thus, the TECHNOPACK project formulates and produces "technoguides" containing location-situation technologies on identified priority commodities in the highlands.

This project is in cooperation with the following agencies: the Ministry of Agriculture and Food (MAF), the Development Bank of the Philippines (DBP), the Provincial Development Staff (PDS-Benguet and Mt. Province), the Philippine Training Center for Rural Development (PTC-RD), the Federation of Farmer Organization of Benguet (FFOB), the Ministry of Human Settlements (MHS-Benguet and Mt. Province), the National Science and Technology Authority (NSTA), the National Irrigation Administra-

tion (NIA), the Cordillera Studies Center (CSC), the Bureau of Forest Development (BFD), the National Council for Integrated Area Development (NACIAD), and MSAC.

In its three years of existence, the TECHNOPACK Project has launched three technoguides: Garden Pea, Potato, and the latest is Backyard Cattle Fattening. Copies of which were distributed to farm technicians, extension workers and farmers.

Status of Commodities in the Pipeline

<u>Commodity</u>	<u>Status</u>
1. Coffee-based agroforestration	Ready for printing
2. Strawberry	Ready for printing
3. Vegetable (carrots, beans, cabbage)	Draft is presently with the technical committee for improvement
4. Sericulture/Moriculture	First draft still being improved by Technical Committee
5. Rose and "Mums"	Draft already submitted to the Secretariat here. It is presently being edited
6. Backyard Livestock	Formulation of first draft is on-going
7. Goat	Formulation of first draft is on-going
8. Fruits (persimon, citrus)	First draft is being formulated
9. Indigenous Vegetable Backyard Gardening	Solicited information by the National Secretariat
10. Updated Potato Technoguide	Data are being organized

C. Cordillera Farmer Leader's Training Program (CFLTP)

The CFLTP is an activity being carried out in collaboration with the Igorot Community Assistance Program (ICAP), the Ford Foundation, the Philippine Training Center for Rural Development (PTC-RD), and MSAC.

The CFLTP conducts training courses on specific commodities for selected farmer-leaders from the four provinces of the Cordillera as follows: Benguet, Mt. Province, Kalinga-Apayao, and Ifugao.

Accomplishments:

From May to September 1984, four training courses were held as follows:

<u>Training Course</u>	<u>Inclusive Dates</u>	<u>No. of Participants</u>
1. Agro-forestry	April 29-May, 1984	23
2. Nursery Management	May 27-June 2, 1984	26
3. Swine Production	July 18-25, 1984	59
4. Food Processing and Nutrition	September 16-23, 1984	37

Four (4) other training courses have been scheduled for 1985. These are on: Mushroom Production and other Vegetable Crops, Food Processing (for housewives), Multiple Cropping, and Sericulture/Moriculture.

D. HARC Monthly Symposium

This activity aims to strengthen and widen the dissemination of research results, as well as update and upgrade the

knowledge and technical skills of researchers. Under this activity, each of the member agencies of HARC coordinates and sponsors a symposium on a special commodity.

Accomplishments:

From January to June, four (4) symposia were held. These are on rootcrops production, forestry commodities, ornamental research, and vegetable crops. Discussed during the various symposia were: current trends, problems, and plans related to highland agricultural development.

<u>Symposia</u>	<u>Date</u>	<u>Sponsoring Agencies</u>	<u>No. of Participants</u>
1. Root Crops Production	Jan. 25	Buguias Experiment Station (BuES), BPI	49
2. Forestry Commodities	Feb. 28	West Central Luzon Forest Research Center (WCLFRC), FORI	50
3. Ornamentals	April 23	Baguio Experiment Station (BES), BPI	20
4. Vegetable Crops	June	Mt. State Agricultural College (MSAC)/ Highland Agricultural Research Center (HARC)	53

E. Highland Agriculture Development Project (HADP)

HADP intends to develop and improve highland agriculture, increase production, and uplift the socio-economic well-being of the highland farmers at the same time maintain the ecological balance of the area. To be funded by ADB, the project has four components as follows: research, extension, manpower

development, and infrastructure development.

Accomplishments:

Early this year, an identification mission from the Food and Agriculture Organization (FAO) (engaged by the Asian Development Bank) visited the proposed project areas. An appraisal report was then submitted to the Agricultural Projects Preparation Unit (APPU) of the Ministry of Agriculture and Food (MAF) for final project feasibility preparation.

The HADP shall be implemented through the MAF, the member agencies of HARC, and other R & D agencies/institutions in the highlands. Full implementation of the research component of the project shall start on the 3rd quarter of 1985.

EXTENSION

The extension service of the College linked with government and private entities was able to conduct 16 seminars and skills training programs on agricultural and non-agricultural aspects for the unemployed and out-of-school youths in the different communities in the Cordilleras. A total of 2,365 participants graduated from these trainings.

A. Extension Service Projects

1. Establishment of five organic farming barangays in La Trinidad, Benguet.
2. Establishment of three municipalities on Integrated Highland Farming Systems (La Trinidad, Tuba, and Itogon).
3. Establishment of a pilot area on Bamboo Production (Tuba, Itogon, La Trinidad, Kapangan and Tublay).

B. Training Programs

Training programs include agricultural and non-agricultural skills training in collaboration with concerned agencies in the Cordilleras.

C. Other Extension Services

1. Plant Clinic - renders services to farmers/graduafos by identifying plant diseases and pests with the corresponding control measures.
2. Animal Clinic - renders services to livestock raisers like deworming, breeding, care and management and control of animal pests and diseases.

3. Soil Analysis Service - conducts soil tests, makes recommendation on fertilizers, cropping pattern, liming, etc.
4. Establishing pilot areas for "research and development" in strategic locations (done by NPRCRTC and HARC).
5. Establishing a tie-up with Commonwealth Garment Manufacturing Company to supply raw materials for crocheting and in return the crocheters who are unemployed rural youths, adult women and professionals make the motif and the company buys their produce.

D. Specialized Training Unit

1. Regional Training Center for Rural Development

The Regional Training Center for Rural Development (RTC-RD) based at the Mountain State Agricultural College (MSAC) is but one of eleven training centers federated under the umbrella of PTC-RD. These network of training centers are strategically located in the various regions of the country. Furthermore, common policies govern them, mutually reinforcing each other.

Institutional Objectives

In the pursuit of the broad mandate of the PTC-RD which is "to speed up and facilitate agricultural and rural development through an efficient and effective program for the development distribution and utilization of applicable technologies by the extension workers of all development agencies and institutions within the government and by all Filipino farmers", the RTC-RD at MSAC coordinates various training course operations and other

activities with the RTC-RD at Sta. Barbara, Pangasinan. Its objectives are:

- To design and conduct training courses to develop the technical capabilities as well as the functional effectiveness of manpower involved in rural development.
- To cultivate stronger inter-agency collaboration among agencies and institutions involved in the planning and implementation of action programs in rural development; and
- To promote and support the complementary programs for accelerating the development of and for expanding the productive opportunities in the rural areas.

Clientele

The RTC-RD at MSAC, in collaboration with RTC-RD at Sta. Barbara, principally services the training requirements of the various agricultural agencies and institutions as well as communities of Regions I and III which are composed of 12 provinces. Specifically, the focus of the training course operations are the various agencies' field workers, field supervisors, subject matter specialists, as well as farmer-leaders.

Courses Offered

The Center offers five basic types of training courses, namely:

1. The Package of Applicable Technology (PAT) Course, which is commodity-based designed for farmer clientele;
2. The Technical Services Delivery (TSD) Course, a function-based course for agency personnel;
3. The Program Implementation Management (PIM) Course, an area-based course involving all types of clientele;

4. Area Development Action Program (ADAP), whereby action programs formulated in previous courses are evaluated; and
5. Curriculum Development and Delivery Course (CDDC), a course for prospective resource persons.

Table 10. Skills Training Conducted by the Institution

Training Program	Graduates
A. Agricultural Skills Training	
Broiler Production & Management	84
Swine Production & Management	83
Vegetable Production (Leafy & Fruits)	104
Root Crops Production & Management	38
Agroforestry	46
Fruit Production & Management	31
Sub-total	406
B. Non-Agricultural Skills	
Bamboo Craft (tie-up with NMYC, NACIDA, NEDA, RTC-RD)	73
Tailoring (tie-up with MECS, NMYC, MAF)	40
Food Processing (tie-up with UL, MAF)	66
Crocheting (tie-up with NMYC, RTC-RD)	79
Cooperatives (two series) tie-up with MAF	84
Institutional Development (with MLG, MAF, MSSD)	65
Sub-total	407
C. Cooperators (Families)	
Organic Farming	255
Integrated Highland Farming Systems	360
Bamboo Production and Utilization	65
Sub-total	680
D. RTC-RD Training (TCOS)	
Farmer-Leaders Training	875
Technicians/Subject Matter Specialists' Training	125
Sub-total	1,000
GRAND TOTAL	2,493

AGRIBUSINESS-ORIENTED PRODUCTION PROJECTS

Aside from MSAC's traditional functions of instruction, research, and extension, it has recently added agribusiness production projects to its programs.

As a device to generate income, this new production orientation integrates the activities of research, technology refinement, extension and agri-business management into a single project.

Some of the agri-business projects implemented during the year were livestock, pomology, floriculture, agro-forestation, mushroom, marketing center, food processing, cafeteria, bakery and the guestel.

The projects demonstrate newly developed technologies generated for their workability, adaptability, and profitability. These also serve as training grounds for students and farmers and as a showcase for the general public.

During the year, a total of ₱503,819.10 was generated from the agri-business projects. It has been noted that the Food Processing Center was the most profitable project followed by the cafeteria although some of the projects also suffered considerable losses.

Table 11. Comparison of Expenses and Cash Remittances* (Production Projects) For the Period Covering January, 1984 to December, 31, 1984

Project	Gross Sales	Expenses	Net Income
1. MSAC Cafeteria	₱ 1,092,522.70	₱ 982,029.48	₱ 110,493.22
2. MSAC Bakery	225,506.90	163,937.49	61,569.41
3. MSAC Grocery	178,902.90	163,432.85	15,470.05
4. Food Processing	907,139.62	650,017.71	257,121.91
5. Swine Project	49,928.00	93,188.70	(43,260.70)
6. Rabbitry Project	1,615.00	2,883.50	(1,268.50)
7. Poultry Project	82,054.90	93,474.35	(11,419.45)
8. Agró-Forestation	105,066.25	132,896.72	(27,830.47)
9. Pomology Project	23,279.98	22,591.35	688.63
Sub-total	2,666,016.00	2,304,452.15	361,564.10

Collections from other projects reflected the following:

1. Men's Dormitory	₱ 22,105.00
2. Ladies' Dormitory	39,880.60
3. Soil Testing Services	460.50
4. 30% School Share from Instructional Production Project	1,706.80
5. 30% School Share from FAHP-Voag Canteen	4,234.12
6. 30% School Share from the Secondary Laboratory High School Canteen	539.03
7. Research Project c/o Research & Technology Refinement	18,767.66
8. Research Project c/o HARC	2,649.85
Sub-total	₱ 90,343.56
GRAND TOTAL	₱ 451,907.66

*Note that the net income for the animal projects reflect only the difference between expenses and remittances. Inventories were not taken up.

*Figures reported for the poultry project reflect transactions from April, 1984 to March 31, 1985 under a new management.

Table 12. Comparison of Expenses and Cash Remittances* (Production Projects) For the Period Covering the 1st Quarter, CY 1985

Project	Gross Sales	Expenses	Net Income
1. MSAC Cafeteria	₱ 253,926.55	₱ 237,331.55	₱ 16,595.00
2. MSAC Bakery	66,092.15	53,685.66	12,406.49
3. Food Processing	130,712.73	127,760.19	2,952.54
4. Swine Project	22,441.25	32,025.00	(9,583.75)
5. MSAC Guestel	11,191.00	2,451.50	8,739.50
6. Rabbitry Project	755.00	268.00	467.00
7. Cattle/Dairy	-	1,885.00	(1,885.00)
Sub-total	₱ 485,118.68	₱ 455,406.90	₱ 29,711.78
Other Collections Reflected the Following:			
1. Men's Dormitory			₱ 2,150.00
2. Ladies Dormitory			11,420.00
3. Soil Testing Services			154.50
4. Instructional Production Project			1,200.00
5. Instructional Production Project			761.05
6. 30% School Share from Instructional Production Project, Comprehensive High School Poultry Project			2,719.97
7. 30% School Share from FAHP-Voag Canteen			2,391.89
8. 30% School Share from Secondary Laboratory High School Canteen			1,402.25
Sub-total			₱ 22,199.66
GRAND TOTAL			₱ 51,911.44

*Please note that the net income for the animal projects reflect only the difference between expenses and remittances. Inventories were not taken up.

Table 13. Summary of Total Income from Production Projects

1. Income for the period January, 1984 to December, 1984	₱ 451,907.66
2. Income for the period January, 1985 to March, 1985	51,911.44
GRAND TOTAL	₱ 503,819.10

ADMINISTRATION

For the fiscal year under review, the President was assisted by an Executive Vice President and three (3) designated vice presidents: VP for Academic Affairs, VP for Research and Development Support Services and VP for Administrative Support Services.

During the year, a six year development plan (1984-1989) of the Institution has been drafted and finalized through series of planning workshops among the faculty and staff with the assistance of consultants from the UPLB, PCARRD, MECS, NEDA, IRRI and FORI. The six year development plan was approved by the Board of Trustees on May 8, 1984 and was adapted on June, 1984 to be the Bible of Operation. This clearly identified and defined the direction and emphasis in the operation of the Institution in the next six years.

The Institution has been very aggressive in its desire to attain a university status as manifested in the approved six-year development plan and in the refiling to the Batasang Pambansa through Benguet's Member of Parliament Samuel Dangwa of the Parliamentary Bill 2200 also known as the University Bill which was formerly filed by the then Assemblyman Andres Cosalan.

Likewise, the Institution also worked out for the passing and signing of the Resolution Number 186 and 467 to the Sangguniang Panlalawigan of Benguet and Sangguniang Bayan of La Trinidad, respectively, endorsing to His Excellency President Ferdinand E. Marcos through the Batasang Pambansa the establishment of a Horticultural Research and Training Institute at MSAC.

To sustain staff morale and efficiency, the Administration through its present leadership had approved and implemented promotion and merit increases for its academic and non-academic staff. During the year, all seventy seven (77) assistant instructors were all promoted to instructor position (Board Res. No. 3, s. 1984). Also, a total of 18 faculty members were promoted to assistant professors and another seven (7) to associate professors (Board Res. Nos. 37 & 72, s. 1984), and one (1) associate professor to professor (Board Res. No. 85, s. 1984). A number of positions were also appointed and/or reclassified.

Of the 266 faculty members, 14 are full professors, 14 are associate professors, 54 are assistant professors and 184 are instructors. A total of 14 substitute instructors has also been hired. The Administration through the PASUC came up with a common criteria for evaluation of academic staff wherein all of the above academic positions shall have to be sub-ranked to a level to which the faculty member occupying such rank deserves.

In the non-academic group, 35 non-teaching personnel were appointed and/or promoted under Board Res. No. 3, another 48 personnel under Board Res. No. 28, and another 13 personnel under Board Res. No. 78, all series of 1984 or a total of 96 non-academic staff. Of the total 336 non-academic staff, 212 were regular employees and 124 were casual and these were either detailed at the Administrative Units, Research units and/or other offices/units.

To uplift the status of the non-academic group which has been considered as the lowest compensated group, representation by the present leadership to Malcañang through the Office of Budget and Management

had already been made for salary increases and other benefits.

The present leadership also granted free tuition to the children of the members of the MSAC faculty and employees with plantilla items who may enrol in the secondary and the collegiate programs of the Institution effective first semester, SY 1984-85 (Board Res. No. 33, s. 1984).

A. Profile of Non-Academic Staff

1. Research

a. Specialists/Assistants	9
b. Research Aides	13
c. Supportive Staff (Casual)	87

2. General Administration

a. Administrative Staff	190
b. Supportive Staff (Casual)	<u>37</u>
Total	<u><u>336</u></u>

Table 14. Number of faculty/staff appointed and/or promoted during the year

Rank	Academic	Non-Academic
1. Promoted to:		
a. Professor	1	
b. Associate Professor	7	
c. Assistant Professor	18	
d. Instructor	77	
2. Non-Academic Positions	-	96

B. Infrastructure and Site Development

In physical and infrastructure development, several projects were completed/started. The following projects were completed during the period:

Completed Projects

1. One poultry house at Agroforestry Project in Ampasit with 1,000 broilers capacity.
2. One 3-pen piggery house at Agroforestry Project in Ampasit with 18 fattening heads capacity.
3. Two 2-bedroom house at the Agroforestry Project Compound in Ampasit.
4. Bailey bridge No. 2 across the Balili river with 10 tons capacity.
5. One 3-classroom building at the Agroforestry Project in Ampasit.
6. Fencing of boundary in Ampasit with interlink wires
7. Agro-Science Complex Building
8. Administration Building
9. Elementary Laboratory School Building
10. Executive Guest House

On-Going Projects

1. Construction of Sports Complex Auditorium Gymnasium
 - a. Phase I - 83.72% finished
 - b. Phase II - 14.50% finished
2. Construction of Library Building
 - a. Phase I - 35.01% finished
 - b. Phase IA - 50.29% finished
3. Site Development

APPROPRIATIONS/FISCAL SUPPORT
1984

Programs/Projects	Amount (₱)
Current Operating Expenditures	
1.0 Formal Instruction and Other Services	
1.1 Advance Education	₱ 829,000.00
1.2 Higher Education	3,183,000.00
1.3 Secondary Education	1,254,000.00
1.4 Elementary Education	657,000.00
1.5 Research	2,594,000.00
1.6 Extension Services	557,000.00
1.7 Auxilliary Services	764,000.00
1.8 General Administration and Support Services	2,816,000.00
Total Current Operating Expenditure	₱ 12,654,000.00
2.0 Capital Outlay (for capital outlays, including construction of permanent improvements and acquisition of equipment)	
2.1 Construction of Permanent Improvements	₱ 6,000,000.00
2.2 Acquisition of Equipment	972,000.00
Total Capital Outlays	₱ 6,972,000.00
GRAND TOTAL APPROPRIATION	₱ 19,626,000.00

Of the total appropriation of ₱19,626,000.00 for fiscal year 1984, ₱12,129,128.00 or 82 percent had been actually released and expended as follows:

Personal Services	₱ 11,469,920.00
Operating & Maintenance	1,530,207.00
Equipment Outlay	2,157,000.00
TOTAL	₱ 16,129,129.00

EXTERNAL LINKAGES

The Institution with the aim to expand its programs has established relations/linkages with the following local and foreign institutions/agencies:

1. Cordillera Studies Center (CSC) of the University of the Philippines at Baguio (UPCB)
2. Buguias Experiment Station (BuES)
3. Baguio Experiment Station (BES)
4. Silk Industry Development Project (SIDP) of the Philippine Textile Research Institute (PTRI)
5. West Central Luzon Forest Research Center (WCLFRC)
6. Benguet's Provincial and Municipal Government
7. Ministry of Agriculture and Food (MAF)
8. Philippine Council for Agriculture and Resources Research and Development (PCARRD)
9. National Economic and Development Authority (NEDA)
10. Baguio Dairy Farm (BDF) of the Bureau of Animal Industry (BAI)
11. National Science and Technology Authority (NSTA)
12. National Research Council of the Philippines (NRCP)
13. Australian Center for International Agricultural Research (ACIAR)
14. Japan International Cooperation Agency (JICA)
15. Centro International Dela Papa (CIP)
16. Ford Foundation
17. International Development Research Council (IDRC)
18. Asia Foundation (Phils.)
19. University of the Philippines at Los Baños (UPLB)
20. Saint Louis University (SLU)
21. Other foreign and local institutions/agencies

INSTITUTIONAL PROBLEMS/RECOMMENDATIONS

Problems

1. The Institution still needs additional manpower for instruction, research and extension in order to meet the required number for a massive R & D programs.
2. Instructions in all the Colleges had been hampered by the inadequacy of equipment, laboratory and office supplies, insufficient classrooms and inadequate library facilities.
3. In a study conducted on students' performances, it was found that most students are poor in oral and written communication.
4. Inadequate housing facilities for faculty and staff is also a problem.
5. Some staff identified with the roster of research personnel are assigned to perform functions not related to research or are not engaged in research activities. Likewise, research proposals which have potentials but are not listed in the commodity assignment or priority research areas as identified by the national research coordinating body are often rejected.
6. On production projects, a feasibility study with a high ROI is not a guarantee to a successful farm operations.
7. Insufficient recreational facilities for students within the campus has been identified as one of the problems.

Recommendations

1. In order to further improve the quality of instruction and to carry out relevant researches and extension services, the minimum technical manpower requirements of the respective departments shall have been considered.
2. Provide adequate facilities to maintain instructional efficiency and R & D capabilities.
3. In the national budget preparation form of programs/projects, it shall have to include books and periodicals as a separate program/project.
4. Establish a speech clinic and more action researches on the student's performance.
5. To maintain a high calibre core staff, prioritization of projects such as manpower development and provision of housing facilities are essential to hold qualified staff.
6. Realignment of personnel such that only those who perform research work or identified with research projects shall be listed under the research staff or a regular research core staff shall be formed. Furthermore, a criteria-based workload scheme for the faculty shall be developed and implemented.
7. Strictly implement MSAC research manual which provides a system of operationalizing the research mandate of the Institution and which states the policies and defines the structure and mechanisms in the implementation of research programs.

8. Feasibility studies or food production plans shall always be prepared and the background/farm experiences of the proponent shall also be considered before funding the proposed project. Delivery of farm supplies approved in the food production plan should not be delayed in order not to disrupt programmed activities of projects.
9. Installation of additional recreational facilities for students inside the school campus.

BOARD OF VISITORS

HIS EXCELLENCY

FERDINAND E. MARCOS
President, Republic of the Philippines

HON. CESAR E. A. VIRATA
Prime Minister

BOARD OF TRUSTEES

HON. JAIME C. LAYA, Minister, Ministry of Education, Culture and
Sports, Chairman

HON. HERMENEGILDO C. DURLAO, Deputy Minister, Representative of
the Minister of MECS to MSAC Board of Trustees

HON. FORTUNATO A. BATTAD, President, MSAC, Vice Chairman

HON. JOSEPH M. ALABANZA, Executive Director, National Economic
and Development Authority, Region I, Member

DR. VEDASTO G. SUAREZ

Special Consultant to the Minister of MECS for
State Universities and Colleges

MR. ROMULO Q. APOLONIO
College and Board Secretary

EXECUTIVE COMMITTEE

CHAIRMAN

DR. FORTUNATO A. BATTAD
President

MEMBERS:

DR. LUCIO B. VICTOR
Executive Vice President

PROF. ELMO O. SANO
Director of Northern Philip-
pines Root Crops Research
and Training Center

DR. ARSENIA D. NAMARIL
VP for Academic Affairs

MR. ROMULO Q. APOLONIO
College and Board Secretary

DR. WILLIAM D. DAR
VP for Research & Development
Support Services; and HARC
Research Coordinator

MR. THEODORE E. ARCISO
Public Relations Officer

DR. ABRAHAM C. PATACSI
VP for Administrative Services;
and Director of Planning

DR. MARCELINA T. AGATEP
Director of Admissions

DR. ESTHER R. HUFANA
Dean of College of Arts & Sciences

DR. CAROLINE B. DIMAS
Director of Student Affairs

DR. JOSE P. ALCISO
Dean of College of Teacher
Education

DR. CARLOS T. BUASEN
Special Assistant to the
President for Internal Control
and Special Studies; and
Director, Land Grants and
Reservation Office

PROF. ADRIANO B. ARONIN
Dean of College of Applied
Engineering and Technology

PROF. ANDRES L. AGLIBUT
Consultant

DR. MARCELINO T. DELSON
Director of Resident Instruction

DR. METHODIA B. MERCADO
Dean of Graduate School

DR. MERCIVAL B. CALITIT
Director of Research & Technology
Refinement; and Director, Institute
of Highland Farming Systems

DR. ERIBERTO C. ALONZO
Dean of College of Agricul-
ture

DR. CIPRIANO C. CONSOLACION
Director of Extension & Training
and RTC-RD Director

PROF. BENJAMIN B. DIMAS
Dean of College of Forestry;
Director of Agro-forestation
and Special Projects and
Director of Production and
Agribusiness Projects

PROF. FRANCISCO R. AQUINO
Director of Physical Education and
Athletic Affairs

Executive Committee continued.

PROF. NORA J. CLARAVALL
Director of Library and
Information Services

MR. REYNALDO F. ALQUIROS
Director of General Administrative
Services

MRS. ESTRELLA A. RAMOS
Director of Finance Division

DR. VILLA L. FORMERAN
Director of Health Services
Division

DR. JOSE B. LUBRICA, SR.
Director, Physical Plant and
General Services

ATTY. FRANCIS A. BULIVAT
Director of Legal and Security
Office

MRS. JOSEFINA M. MARQUEZ
Chief, Budget Office

MR. OSCAR B. LIMPIN
Chief, Accounting Office

MR. ERNESTO M. LUMIQUED
Chief, Supply and Property
Office

MR. DOMINGO E. GARIN
Chief, Cashiering

CAPT. SINFOROSO M. DUMLING
Commandant, Citizens Mili-
tary Training

oooOooo

COMMITTEE ON THE PREPARATION
OF MSAC ANNUAL REPORT
SY 1984-1985

Chairman	:	Dr. William D. Dar
Members	:	Carlito P. Laurean Priscilla B. Laron Mary Ann P. Botengan
Typist	:	Judith D. Fermin

oooOooo