

**"COMMITMENT
TO
DEVELOPMENT"**

Sixth and Seventh Annual Report

**MOUNTAIN STATE AGRICULTURAL COLLEGE
La Trinidad, Benguet**

School Years 1975 - 1976 and 1976 - 1977

BRUNO M. SANTOS
President

"COMMITMENT TO DEVELOPMENT"
SIXTH AND SEVENTH ANNUAL REPORT

MOUNTAIN STATE AGRICULTURAL COLLEGE
La Trinidad, Benguet

School Years 1975-1976 and 1976-1977

BRUNO M. SANTOS
President

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


July 15, 1977

His Excellency
President Ferdinand E. Marcos
Malacañang, Manila

S i r :

I have the honor to submit herewith pursuant to Section 7 of Republic Act 5923, the Sixth and Seventh Annual Report of the President, Mountain State Agricultural College, La Trinidad, Benguet, covering the school years 1975-1976 and 1976-1977.

Very truly yours,


BRUNO M. SANTOS
President

Copy furnished:

1. The Honorable Secretary of Education and Culture
2. Members of the Board of Trustees

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MOUNTAIN STATE AGRICULTURAL COLLEGE
La Trinidad, Benguet

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"COMMITMENT TO DEVELOPMENT"
ANNUAL REPORT OF THE PRESIDENT OF THE MOUNTAIN STATE
AGRICULTURAL COLLEGE SCHOOL YEARS 1975-1976
AND 1976-1977

HIGHLIGHTS

This report covers two academic years, 1975-1976 and 1976-1977. The latter ended the second year of the implementation of the second Five-Year Development Program of the college.

Highlights of Accomplishments

Within the framework of the development goals of the second Five-Year Development Program of the college, the school years under review yielded notable achievements:

1. Building Construction. -- Despite the non-release of 60 per cent of the allotment for capital outlays, construction of three of the seven buildings scheduled for 1975-1977 was undertaken. Two were completed as of this writing, while the third is 75 per cent finished. The three buildings represent 43 per cent of the target.

The completed edifices, already being used, are the two-storey soils-chemistry building and the one-storey agricultural meteorology building.

The soils-chemistry building, with a book value of ₱652,082.04, is made of reinforced concrete. It occupies a 475-square-meter site of the main campus.

The agricultural meteorology building is semi-concrete, with a floor area of 108 square meters and a book value of ₱102,855.48. It is situated at Banig, Balili.

Nearing completion is the three-storey agricultural engineering building, for which was already spent the sum of ₱2,459,237.35 as of June 30, 1977. It is made of reinforced concrete, and is situated on a 3,358 square-meter site at the main campus.

2. Instruction. — Consonant with the objectives of the college and the national development goals, the seven undergraduate degree programs and the graduate degree program carried out instruction through student-centered teaching-learning activity methods. Emphasis shifted from theoretical or lecture method to the laboratory and field methods in an effort to balance academic and practical experiences and effectively translate theory to practice. Course syllabi were constantly revised and updated. Teaching aids continued to be locally improvised by the faculty and students.

The socio-cultural programs included Monday convocations for students and those shown to the public

during municipal, provincial, and/or national celebrations of important events. These were revitalized to permit the participation of a maximum number of students as principal actors or performers, thereby making them effective channels of personality development and citizenship training.

The graduate program underwent a one-year review in content as well as policy. As approved by the Board of Trustees, the areas of specialization included M.S., major in agricultural education, agricultural extension, animal science, horticulture, agronomy, and social science, and M.A. in Teaching Practical Arts.

3. Research. -- Most of the researches completed during the academic years under review were done by graduate and undergraduate students of the college in fulfillment of degree requirements. On-going researches being undertaken by faculty members are funded by PCARR, SEARCA, IPB, and private agencies, like San Miguel Corporation, RAMCAR, etc.

4. Extension. -- The outreach activities of the college through the MSAC-PCARR Social Laboratory and MSAC-NMYC National Agricultural Skills Training Program continued to have direct and beneficial impact on the quality of life of the farmers in Region I.

5. Production Projects and Incomes. -- The agrobusiness activities of the college continued to progress. The total net income share of the college from production projects of vocational instructors/managers for the fiscal year ending June 30, 1977 was P97,733.17, compared to P90,375.26 of the preceding year. The increase amounted to P7,357.91.

CHAPTER I

INSTRUCTION

A. Student Population

Students from 24 provinces and one city of the country and Thailand were enrolled in the different curricular programs of the college during the two academic years under review. The provinces and city fall under six of the 13 regions of the country.

1. Distribution of Students. -- In the tertiary level, more than 80 per cent of the students came from Region I, as determined from the annual enrolment by region, to wit:

<u>Region No.</u>	<u>Designation</u>	<u>1975-76</u>	<u>1976-77</u>
1	Ilocos	1,255	1,762
2	Cagayan	156	305
3	Central Luzon	21	30
4-a	Southern Tagalog & Palawan	12	18
6	Western Visayas	2	21
7	Eastern Visayas	2	0
Foreign	Thailand	24	15
	T o t a l s	<u>1,472</u>	<u>2,151</u>

The distribution of the college students by annual enrolment in the provinces of Region I is as follows:

<u>Province</u>	<u>1975-76</u>	<u>1976-77</u>
Abra	23	37
Baguio City	145	119
Benguet	462	501
Ilocos Norte	8	15
Ilocos Sur	176	224
La Union	185	226
Mountain Province	39	331
Pangasinan	217	315
Totals	<u>1,255</u>	<u>1,762</u>

2. Enrolment. The annual enrolment figures in the different curricular programs for the two school years under review are presented hereunder.

<u>Curricular Programs</u>	<u>1975-76</u>	<u>1976-77</u>
Secondary Level:		
Vocational Agriculture	389	362
Agricultural Homenaking	229	231
Non-Degree Post-Secondary Programs:		
1-Year Farm Mechanics	6	15
2-Year Forest Ranger Course	187	273
Undergraduate Programs:		
BSA	632	902
BSAE	402	504
BSHT	150	165
BAB	37	46
BSAT*	---	68
BSF*	---	106
Graduate Program:		
MS	<u>63</u>	<u>72</u>
Total	<u>1,472</u>	<u>2,151</u>

*Offered first semester, 1976-1977.

Not included in the annual enrolments for school years 1975-1976 and 1976-1977 are the enrolments for the summer terms. As noted, however, the summer enrolments in the undergraduate programs are less than the semester terms. But the summer enrolments in the graduate programs have so far been on the upward trend. This is partly attributed to the registration of teachers pursuing graduate studies.

3. Graduates. -- Below are the number of graduates from the different curricular programs during the two school years under review.

<u>Curricular Programs</u>	<u>1975-76</u>	<u>1976-77</u>
Secondary Programs:		
Vocational Agriculture	45	48
Agricultural Homemaking	36	36
1-Year Post-Secondary Farm Mechanics	4	13
2-Year Forest Ranger Course	7	23
B.S. in Agriculture	22	29
B.S. in Agricultural Education	13	22
B.S. in Home Technology	12	30
Bachelor of Agri-Business	2	3
Master of Science	6	8
Totals	<u>147</u>	<u>212</u>

4. Scholarship Grants. -- Two hundred and sixty-nine students enjoyed various scholarships during the school year 1976-1977 under report.

4.1 College Scholarships. -- Granted college scholarships were students who excelled in their academic

studies or extra-curricular activities, like promoting socio-cultural development. Their number is distributed as follows:

Academic Scholars (President's and Dean's Lists)	22
KONTAD Cultural Troupe	35
Glee Club	57
Band Members	6
ROTC/WATC	6
School Paper (College and Secondary).....	6
Student Assistanships	<u>29</u>
Total	<u><u>157</u></u>

4.2 State and Veterans Scholarships. --- Government and veterans scholarships granted to students were:

National Integration Study Grant	61
PANAMIN	6
Study-Now-Pay-Later Plan	17
Philippine Veterans Administration	15
Armed Forces of the Philippines	1
United States Veterans Administration	<u>12</u>
Total	<u><u>112</u></u>

B. The Curricular Programs

The curricular programs of the college carried out the statutory objectives of providing professional, technical, and special training, and promoting research, extension services, and progressive leadership in the field of agriculture and home technology within the framework of a stronger commitment to the goals of national development.

The objectives were attained through lectures, lecture-demonstrations, practical experiences in the laboratory, field trips and observations in the different disciplines, instructional self-discovery methods through student activities, and student-centered teaching-learning activity methods, which were group paced.

1. Achievements by Academic Divisions

1.1 Technical Agriculture. -- The technical agriculture division collected and prepared teaching aids, prepared and set up agricultural exhibits, organized review classes outside of regular schedules, conducted educational trips, coached and chaperoned athletes during provincial and Ilocos Regional Athletic Association meets, assisted students during Monday convocations, and advised thesis students in their respective fields.

1.2 Agricultural Education Division. -- The agricultural education division advised thesis students in their respective fields of specialization, invited resource speakers on special celebrations, assisted students during Monday convocations, conducted research on psychology through random sampling, coached and trained athletes during the provincial and IRAA meets, guided students during intra- and extra-curricular activities, prepared and used audio-visual aids and syllabi.

1.3 Bachelor of Agri-business Management. — The BAHM program improved and revised prescribed syllabi, performed actual field practice, and participated in conferences and seminar-workshops related to the specialization of instructors and professors.

Five graduates of the BAHM division found employment as a result of the on-going research conducted with the PCARR on agricultural marketing.

The NMYC National Agricultural Skills Training Program, which was conducted under the auspices of the BAHM division, also made possible the employment of eight training instructors.

1.4 Bachelor of Science in Animal Technology. — The BSAT program undertook specimen collection on embryology, parasitology, pathology, and skeletons. It also undertook animal inoculation in Benguet Province.

1.5 Bachelor of Science in Forestry. — The BSF program accomplished projects through student voluntary services, restocked some portions of the MSAC forest reservation with different tree species with the aid of the RP-German Training Center, and helped sponsor seminars on reforestation and forest management with the Student Action Committees and the Bureau of Forest Development.

1.6 Bachelor of Science in Agricultural Engineering.

The BSAEng'g program trained about 800 students on farm shop practice, irrigation and drainage, farm structures, electrification, and meteorology; constructed five temporary quarters for faculty and employees; provided 14 tables for 14 faculty members; and cemented 200 meters of floor walks through voluntary services.

1.7 Bachelor of Science in Home Technology. -- The

BSHT program purchased additional items for the division; undertook FAHP projects and activities; conducted research activities; participated in conventions and seminar-workshops; attended graduate courses for professional growth; revised the four-year home technology curriculum; prepared exhibits for Commencement Week; and provided opportunities for student socio-cultural development through active participation in socio-cultural presentations, sports, and athletic activities.

1.8 Agricultural Extension Division. -- The divi-

sion produced and disseminated information materials to the rural farmers, conducted short-term courses relevant to the developmental needs of the region, and introduced new crops in the rural areas of the region.

1.9 Secondary Division. -- The secondary division assisted students in all intra- and extra-curricular activities on different occasions; updated lesson plans based on the new and graded prototype guides of the EDPITAF; accomplished EPS Forms 1, 2, 18-A, 137-A and 138; published two issues of "The Mountain Breeze"; and produced vegetables with comfortable profits from the farm business projects of the students.

1.10 On-going Projects. -- The BSAEng'g program is currently engaged in hollow-block making, manufacture of faculty tables and blackboard for the new agricultural engineering building, and cementing the campus walks.

The BAE program submitted a proposal on "Economics of Producing Triticale" through the Bureau of Plant Industry with a proposed budget of P75,000.00 for a three-year duration.

The BSAE program has been making audio-visual aids for the different fields of study. It has been also revitalizing and intensifying the programs and activities of the Future Farmers of the Philippines Collegiate Chapter.

2. Graduate Studies Program

2.1 Curriculum Review. -- The present curricular offerings and graduate bulletin underwent a one-year re-

view and revision. Certain policies regarding operations of the graduate program were made in written form. These were adopted in a meeting of the Board of Trustees on May 30, 1977.

In that Board meeting, the curricular programs and areas of specialization, as approved, are as follows:

- a. Master of Science, major in agricultural education, agricultural extension, animal science, horticulture, and soil science; and
- b. Master of Arts in Teaching Practical Arts.

2.2 Graduate School Forms. -- The new graduate school bulletin spelled out certain procedures to be followed both by faculty members and students.

Forms devised to facilitate procedural matters are as follows:

- a. MSAC-GS Form 01 - Application for Admission;
- b. MSAC-GS Form 10 - Program of Study;
- c. MSAC-GS Form 15 - Report on Results of Examination; and
- d. Unnumbered - Thesis Panel Fee.

New forms are being planned to improve the records management aspect of the graduate program.

2.3 Graduate Faculty and Staff. -- The present graduate faculty included nine for agricultural extension and education, and three each for horticulture, animal

science, and practical arts. Only one was available for soils. In view of this, there is a felt need for more graduate faculty members with the appropriate masteral and doctoral degrees.

Needed for the graduate faculty for the next two years are:

- a. Two (M.S. or Ph.D.) in agricultural extension education;
- b. Three (M.S. or Ph.D.) in animal science; and
- c. Two (M.S. or Ph.D.) in plant science related fields, including soils and crop production.

Other needed personnel are a secretary and a clerk to man the graduate school office.

2.4 Enrollment and Graduates. -- There was a slight increase in the enrollment and also in the number of masteral graduates for the academic year 1976-1977.

Most of the graduates were faculty members of other state-chartered educational institutions of Regions I and II, government offices, like the Bureau of Agricultural Extension, Bureau of Plant Industry, and Bureau of Soils, foreign students (Thailand), and some from the elementary and high schools.

The student population for school year 1976-1977

was:

<u>Term</u>	<u>Enrolment</u>	<u>Graduates</u>
1st Semester	71	5
2nd Semester	58	3
Summer, 1977	<u>22</u>	<u>-</u>
Totals	<u>251</u>	<u>8</u>

2.5 Some Immediate Needs. -- Needed by the graduate office are:

- a. Office equipment, supplies and materials, among which are a typewriter, staple machine, filing cabinets, staple remover, adequate writing materials, stencils, and coupon bonds.
- b. A definite amount should be set aside for the operation of the graduate school. This is estimated at P350,000.00 for 1978. Justification was earlier submitted to the President and discussed with the Commissioner of the Budget. This amount was included with the item on higher education.

C. Student Services and Instructional Facilities

1. Guidance and Counseling Services

1.1 Accomplishments. -- Below are the accomplishments for the school year 1976-1977:

- a. Administration of Mental Ability Tests to first year high school and college students;
- b. Visitation of homes of students referred to the Guidance Office and conference with parents in school and at home;

- c. Sending letters to parents of students referred to the Guidance Office;
- d. Updating the data of students.
- e. Conducting individual and group counseling of re-entering drop-outs, failures, and identified potential delinquents of the previous years;
- f. Counseling students with health problems with the assistance of the health personnel; and
- g. Assisting students with emotional and family problems for adjustments.

1.2 Statistical Report. -- A total of 2,130 cases was handled by the guidance services, to wit:

<u>C a s e s</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>
Drop-outs			
High School	6	0	6
College	10	15	25
Marriages			
High School	1	1(couple)	1
College	6	6(couples)	6
Psychological Tests (Mental Ability)			
High School	304	130	434
College	189	121	310
Excuse Slips Issued			
High School	267	107	374
College	317	238	555
Home Visitations			
Follow-up Cases	12	18	30
Hospital Visitations	7	6	13
Referred Cases			
Health Problems	6	10	16
Goiter Control	0	54	54
Counseling Services			
High School	52	4	56
College			
Indulging in pre-marital sex	4	7	11
Falsified ID and penmanship	17	10	27
Conference with Parents	23	25	48
Conference with Teachers	3	15	18
Special Cases	19	15	34
Totals	<u>1,317</u>	<u>820</u>	<u>2,130</u>

1.3 Recommendation. -- There is a felt need for the recruitment of one male guidance personnel to take care of male students who are drunk and to frisk them for bladed weapons and possible drugs. This would strengthen the guidance staff members and reduce their load to enable them to devote more time in taking action on students with problems.

2. Library Service

2.1 Library Collection. -- The total number of library collection as of May, 1977 reached 12,234 references, classified as follows:

Books	11,264
Pamphlets	676
Serial Titles (Local and Foreign)...	166
Thesis Collection	<u>128</u>
Total	<u>12,234</u>

2.2 Library Clientele. -- The number of persons who made use of the library is classified as follows:

<u>Section</u>	<u>2nd Semester</u>	<u>Summer</u>
Undergraduate Library	28,787	5,188
Graduate Library	13,673	385
Periodical Library	10,269	2,532
Vocational Library	<u>20,660</u>	<u>Closed</u>
Total	<u>73,389</u>	<u>8,105</u>

The total number of books circulated is 49,061, while the total number of unavailable books is 4,003.

2.3 Library Staff Output of Work. -- The work output of the library staff is classified into technical service and business service to wit:

a. Technical Service

Title classified	5,778
Books accessioned	5,792
Books labeled	5,733
Books pasted with book pockets, date due slip	5,704
Cards typed	10,755
Books withdrawn (transferred to High School)	55
Number of periodicals indexed.....	101

b. Business Service

Incoming correspondence	27
Outgoing correspondence	19
Memoranda issued	28
Book titles recommend for purchase	94

2.4 Recommendation. -- The acquisition of more books and audio-visual aids and the employment of additional personnel are needed to meet the demand of the steadily increasing academic population of the college.

3. Dental and Medical Services

3.1 Dental Services. -- The accomplishments of the dental clinic for school year 1976-1977 are as follows:

a. Treatments

1) Number of patients inspected

First visit	560
Follow-up	267

2) Number of students with defects	806
3) Number of students treated	629
4) Number of students corrected (caries)..	2
5) Number of students given oral prophylaxis	130
6) Number of extractions made	
Permanent	231
Temporary	25
7) Fillings made	
Silver	85
Cement	75
Silicate	48
Zinc oxide paste	502
8) D.M.F. Survey (Permanent Teeth)	
Number of teeth decayed (D)	3,061
Number of teeth missing (M)	1,008
Number of teeth filled (F)	302

b. School Health Education

- 1) Speaker - High School Program on "Dental Care";
- 2) Conference - Philippine Dental Association, San Sebastian College, Manila;
- 3) Workshop - First Regional Health Workshop, Vigan, Ilocos Sur; and
- 4) Individual chair-side instruction.

3.2 Recommendation. -- The employment of a part-time dentist is proposed for students of the MSAC Elementary Laboratory School and MSAC General Secondary Laboratory School.

3.3 Medical Services. -- Below are the accomplishments of the medical clinic for the academic year 1976-1977:

a. Number of students treated	1,238
b. Number of teachers/employees treated	358
c. Number of dependents treated	40
d. Number of students/teachers single year transferred to outside agencies	62

3.4 Abnormal Findings. -- The defects and ailments of the patients are classified as follows:

a. Head and Neck (EENT)

Headache	298
Conjunctivitis	44
Tonsillitis	15
Sorethroat	24
Goiter	60
Sty	30
Otitis media	7

b. Abdominal Diseases

Abdominal pain	23
Gastro enteritis	115
Dysmenorrhea	28
Hyperacidity	37
Epigastric pain	7

c. Genito-Urinary Diseases

Amenorrhea	6
------------------	---

d. Upper Extremities

Carbuncle	33
Sprain	2
Alomatitis	11

e. Lower Extremities

Burn	16
Dogbite	2
Scabies	5

f. Skin Diseases	
Allergy	45
Tinea flava	18
g. Influenza	22
h. Hyperpyrelia	6
i. Hypertension	25
j. Nervous diseases	<u>334</u>
Total	<u>1676</u>

4. Housing Services

4.1 Number of Residents. -- The number of residents per month in the Ladies Dormitory for the school year 1976-1977 is shown as follows:

First Semester

June	102
July	104
August	102
September	102
October	102

Second Semester

November	98
December	97
January	94
February	95
March	98

Summer

April	62
May	60

4.2 Dormitory Activities. -- Daily and general monthly cleaning and socials were the activities during the academic year under review.

Following were the social activities:

- a. June - Orientation of new students on house rules and regulations;
- b. July - Welcome party and induction of officers;
- c. October - Acquaintance party;
- d. December - Christmas party;
- e. February - Valentine's party; and
- f. March - Farewell party in honor of graduating residents.

5. Co-Curricular Programs and Activities

5.1 Homeroom, FFP-FAHP, YCAP and ROTC-CIVAC Organizations. -- For the school year 1976-1977, the secondary homeroom and FFP-FAHP organizations and the College YCAP and ROTC-CIVAC organizations were actively engaged during Saturdays and off-school hours in the following:

- a. Campus and national superhighway cleanliness and food production;
- b. Hauling and filling up of 200 meters of the foundation of cemented walk on the campus with gravel and sand from the river;
- c. College and community socio-cultural program during the Christmas season, provincial meet, town fiesta, and commencement exercises;

- d. Reforestation and flood control activities, such as planting about 10,000 pine tree seedlings at the college forest reservation and reinforcing the college banana grove with about 500 banana suckers between the floriculture project and the Balili river; and
- e. Intranural physical fitness and sports programs, provincial and regional meets, and other college-community athletic games held from time to time in the MSAC playground.

5.2 KONTAD. -- The MSAC Cultural Troupe, known as KONTAD, performed highland cultural dances on the campus, in the community, and Baguio City. They were also invited to perform before audiences in the Province of Benguet and elsewhere in the country.

5.3 MSAC Glee Club. -- The MSAC Glee Club provided free choral songs for various occasions in the community. In many instances, the club won awards and prizes in community choral singing contests held during the year.

5.4 MSAC Judo Club. -- Sponsored by the Baguio YMCA, the members of the Judo Club demonstrated personal discipline on the campus and in the community as a result of their training in Asian martial arts.

5.5 MSAC Boy and Girl Scouts. -- As in previous years, the MSAC boy and girl scout troop leader and members were active. Some were selected to represent the Province

of Benguet and/or the region in camporees and jamborees held outside the province.

5.6 MSAC 4-H Club. -- The leaders and members of the club were active. During the school year 1976-1977, two MSAC 4-H'ers were awarded two-year farm training programs in Pennsylvania and New York. One was a secondary agriculture graduate, and the other was a college agribusiness graduate.

A similar agricultural training grant in the United States was awarded to a BSA graduate for the academic year 1977-1978.

D. Alumni Affairs

Two years ago the MSAC Alumni Association launched a fund drive among its members to raise money for the construction of a new Alumni Home. The building plans were prepared by the MSAC development office.

For effective management of alumni affairs, a token Secretariat was housed on the campus.

The present Alumni Hall, which has been occupied for almost three years as a warehouse by the National Grains Authority (NGA), was erected by the MSAC Alumni Association.

CHAPTER II

R E S E A R C H

A. Research Projects

The functions of the Research Division were carried out by a nine-man staff, to wit: four research assistants with major fields in entomology, soil science, animal husbandry, and home technology; one statistical aide, major in mathematics; one mushroom technician; and three laborers.

The research assistants and thesis advisers met several times to discuss problems on thesis advising and on the research program of the college.

1. Accomplishments

Despite staff shortages due to the assignment of research assistants to full-time teaching loads, some researches were accomplished.

1.1 Completed Researches. -- Most of the researches were conducted by students for the fulfillment of degree requirements, viz: six graduate theses and 16 undergraduate theses. All these theses were applied researches on vegetable crops and animal science. Selected research abstracts appear in Appendix A of this Annual Report.

The results of four faculty researches are being statistically analyzed for interpretation, to wit:

- a. Rate of Tuber Production of Three White Potato Varieties Under Highland Conditions, by Lucio B. Victor and Elmo O. Sano;
- b. Advanced Yield Trial of Six White Potato Varieties, by Lucio B. Victor and Elmo O. Sano;
- c. Effect of Liquid Fertilizer on the Yield of White Potato, Cabbage, Garden Pea, and Tomato, by Elmo O. Sano; and
- d. Effect of Cut and Uncut Seedpieces on the Yield of White Potato, by Elmo O. Sano.

1.2 On-going Researches. --- On-going faculty researches funded by agencies are:

- a. Varietal Evaluation of Chrysanthemum Under Highland Conditions, a PCARR funded project, under Mrs. Araceli G. Ladilad;
- b. Sweet Potato as a Substrate for Nata Production, a PCARR funded project, under Prof. Rosa C. Abastilla;
- c. Collection and Evaluation of Strawberry Varieties in the Philippines, a PCARR funded project, under Prof. Faustino G. Hernando; and
- d. Evaluation of JC-061 (Insecticide) Against Diamond Blackmoth, *Plutella xylostella* Linn., funded by AGCHEM, under Miss Lita P. Mollitas.

1.3 Research Proposals. --- Twelve research proposals were submitted to PCARR for funding:

- a. Best Rate and Time of Applying Fertilizer to Irish Potato, by Conrado J. Oliveros;

- b. Inventory of Soil Characteristics and Land Use Planning of Highland Areas, by Conrado J. Oliveros and Rogelio D. Colting;
- c. Root Crop Production in Highland Areas, by Erna F. Kayan, Rogelio D. Colting, and Conrado J. Oliveros;
- d. Cropping Pattern for Highland Vegetable Crops, by Lucio B. Victor;
- e. Production of White Potato Seedpieces in the Farmer's Farm for Commercial Planting, by Lucio B. Victor and Elmo O. Sano;
- f. Cost and Return of a White Potato-based Cropping System, by Lucio B. Victor and Elmo O. Sano;
- g. Biology and Control of Potato Tuber Moth, *Phthorinae operculella* Zelleo, by Lita P. Molitas;
- h. Comparative Test of Six Broiler Commercial Strains, by Sonwright B. Maddul;
- i. Identification and Quantification of Physical Variables in the Sciences of Farming Systems in Highland Areas, by Methodia B. Mercado and Cipriano C. Consolacion; and
- j. The Socio-Economic Factors Affecting Farming System of Potatoes in Benguet, by Elmo O. Sano, Methodia B. Mercado, and Conrado J. Oliveros.

2. Research Linkage Projects

Research projects of the college jointly undertaken with government and private agencies are:

- a. Upland Vegetable Research (MSAC-IPB Project);
- b. Research Project on Marketing of Vegetables

(MSAC-PCARR);

- c. Strawberry Research Project (MSAC-PCARR);
- d. Floriculture Research Project (MSAC-PCARR);
- e. Research Project on Sweet Potato (MSAC-PCARR);
and
- f. Barley Oat Research Project (MSAC-San Miguel Corporation).

The research machinery of the college needs strengthening with more adequate funds for more technical staff members, research operations buildings, more computing machines, and more reference books, and technical journals.

B. Future Plans of the Research Programs

1. Main Thrust of Researches

The main thrust of the research activities of the college from 1978 onward will be on the following:

- a. Applied researches on traditional and non-traditional crops, including mushrooms;
- b. Applied researches on poultry and swine feeding;
and
- c. Socio-economic researches to improve the quality of life of the people in the countryside.

1.1 Researches on Traditional Crops. -- Applied researches on traditional crops will be on the following areas:

- a. Fertilizer studies on leafy, fruit, and root vegetables;
- b. Seed production experiment on beans, sweet peas, pechay, radish, and Chinese cabbage;
- c. Cropping system or pattern for highland vegetables;
- d. Crop protection;
- e. Seed pieces production and storage of Irish potato;
- f. Spacing studies on carrot and green onion;
- g. Variety collection and trial of sweet potato; and
- h. Mushroom production and rice culture.

1.2 Researches on Non-Traditional Crops. -- The researches will be on the cultural studies of asparagus, coffee, apple, pear, wheat, and triticale.

1.3 Researches on Poultry and Swine. -- The researches will be on feeds and feeding. The use of feed supplements and substitutes to reduce production cost and increase profit will be the main target of researches on poultry and swine for a start. Other areas of study, like breeding and genetics and stocking rate, will be explored later.

1.4 Socio-Economic Researches. -- For the improvement of rural life, socio-economic researches on marketing and applied nutrition will be conducted.

To be used in this socio-economic study will be the method of the UNICEF-assisted Philippine Applied Nutrition Program, now the NFAC. Specifically, the study will cover food production, nutrition-education, training, health and sanitation.

C. Research Publications of the College

1. Periodicals, Pamphlets, and Handbooks

The research division disseminated to farmers the following publications:

- a. A Handbook on Potato, by Elno O. Sano;
- b. New Money-Making Industry: French Mushroom, a pamphlet, by Mauricio B. Cadaweng and Faustino G. Hermano;
- c. MSAC Farm News Bulletin;
- d. Harvest;
- e. Agriscope; and
- f. Agricultural Review.

Also disseminated to farmers were issues of The Philippine Agriculturist, a journal of the College of Agriculture and Central Experiment Station, U.P. at Los Baños, Laguna.

2. MSAC Research Journal

The college will print the maiden issue of the MSAC Research Journal by September, 1977. To be published

quarterly, it will deal on technical and social researches.

The journal will supplement and, in some ways, supersede three earlier publications, namely, Agriscope, Agricultural Review, and Harvest.

CHAPTER III

EXTENSION

A. Extension Program

The extension division of the college is involved in the introduction of new agricultural skills and transfer of agro-technology in the rural areas.

1. Specific Objectives. -- Below are the specific objectives of the extension program:

- a. Produce comprehensive, readable and useful information materials;
- b. Conduct short-term courses relevant to the needs of the region;
- c. Offer specialist support to agencies of change; and
- d. Conduct action program cum research.

2. Functions. -- The functions of the extension program include extension information, training, specialist report, and action program cum research.

3. Extension Strategies. -- The extension division employs the following strategies: deployment of personnel, personalized assistance, team approach, linkages, involvement of community people, and institutional approach.

B. MSAC-SEARCA Social Laboratory

The extension program of the college is involved in the operation of a social laboratory in the rural areas, a joint project with the Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA).

1. Specific Objectives

The specific objectives of the social laboratory are the following:

- a. Accelerate the flow and use of science and technology;
- b. Maximize the systematic application of social science knowledge and development;
- c. Develop a model for the development of a rural community with science and technology as its main source of manipulated variables;
- d. Introduce scientific and better practice in farming operations; and
- e. Develop credit consciousness and marketing facilities.

2. Accomplishments

Extension projects and activities were tied up and integrated with other change agencies. MSAC facilities and resources were also used.

2.1 Crops and Projects. -- Hereunder are the achievements for the school year 1976-1977:

- a. Rice Project. -- Twelve hectares were planted, with a yield of 89 cavans per hectare. The number of cooperators was 23 farmers.
- b. Vegetable Project. -- Thirty-six hectares were cultivated, with 44 farmers as cooperators. The yield was 19 tons of assorted vegetables.
- c. Fish Culture. -- A total of 2.5 hectares was used, with 27 cooperators. No figure was available as to yield.
- d. Broiler Production. -- Two cooperators were involved. They sold 1,156 broilers worth P11,000, realizing thereby a net gain of P751.40.
- e. Piggery Project. -- Eight cooperators produced 459 pigs.
- f. Orchard/Fruit-Tree Project. -- Twenty-four cooperators planted 6,431 fruit trees.
- g. Immunization Drive. -- Innoculated were 2,059 goats, pigs, cattle, and carabaos.
- h. Irrigation Project. -- Two irrigation projects, costing P44,000.00, were completed with the assistance of the National Irrigation Authority. Also completed were personal irrigation projects worth P5,000.00. About 50 hectares are benefited by the completion of these irrigation projects.
- i. Tailoring/Sewing Project. -- Twenty out-of-school youth graduated from the tailoring and handicraft classes. The H.E. tailoring project netted P2,756.00 that went to the trainee graduates.
- j. Home Economics Project. -- A net profit of P589.00 was realized from the H.E. projects during the training activities.
- k. Loan Assistance. -- A total amount of P94,000.00 was borrowed by farmer cooperators to establish their agricultural projects.
- l. Multi-Farming. -- Twelve farmer cooperators undertook multi-farming projects.

- m. Nutrition and Family Planning. -- Sixteen farm family cooperators had tie-up projects with other agencies.
- n. Beautification and Cleanliness. -- The drive resulted in the completion of 14 water-sealed toilets, 26 pit toilets, 89 blind drainage, and in the planting of ornamental plants.

2.2 New Crops. -- Introduced for cultivation or propagation were bulb onions, garlic, lanzones, grapes, water melon, giant peper, persimon, and black pepper.

2.3 Information Materials. -- Produced and distributed were: (a) 1,020 copies of two issues of The Change Agent, a newsletter; (b) 500 copies of a bulletin on multiple cropping; and (c) 500 copies of monograph on coconut culture.

Other bulletins slated for distribution are still being edited.

3. On-going Researches

On-going researches being conducted and expected to be completed before December 31, 1977 are:

- a. Program Implementation of Government Agencies in Burgos, Ilocos Sur;
- b. Kaiñgin System of Farming in Bagulin, La Union;
- c. Cultural Practices of Social Laboratory Cooperators;

- d. Common Posts and Diseases of Vegetables in the Social Laboratory Project;
- e. Common Posts and Diseases of Rice;
- f. Program Implementation of the Bureau of Agricultural Extension in Kalinga-Apayao; and
- g. Credit Requirements of Social Laboratory Cooperators.

C. MSAC-NMYC National Agricultural Skills Training Program

Aside from the extension division of the college, the agri-business division had also been engaged in extension work. It had jointly conducted with the National Manpower and Youth Council (NMYC) a national agricultural skills training program in three selected sites in the Province of Benguet.

Live-in instructors from the college conducted classes for farmers actually engaged in agro-business activities concerning crops and animals.

1. Accomplishments

Below are the number of graduates and drop-outs in the courses offered in the three training sites:

<u>Municipality</u>	<u>Course</u>	<u>Graduated</u>	<u>Dropped</u>
Atok	Agronomy	66	4
	Animal Husbandry	64	5
Kapangan	Agronomy	40	12
	Animal Husbandry	36	19
Tublay	Agronomy	39	5
	Animal Husbandry	<u>40</u>	<u>8</u>
Total		<u>285</u>	<u>53</u>

Of the 285 graduated farmer-trainees, 145 (51 per cent) had training on crop production and 140 (49 per cent) on animal production.

2. Termination of Training Program

The NMYC tie-up with the college was terminated on January 31, 1977, in view of the distances of the new training sites. It was arranged that the Buguias-Loo Agro-Industrial School of Loo, Buguias, Benguet will take over the NMYC National Agricultural Skills Training Program that will conduct classes for rural farmers in the north.

D. MSAC-PCARR Project

The agri-business division of the college through linkage with the PCARR has been conducting a research on agricultural marketing.

With a budget of P73,361.00, the research was started on December 1, 1975. Five persons have been employed to help conduct the study, which will terminate on June 30, 1978.

E. Production Projects and Incomes

The production and self-liquidating projects of the college were maintained for income purposes. The projects also served as laboratory for students and as demonstration

farms of the different extension programs.

Some farmers from the countryside visited the production projects as bases for the establishment or improvement of their own production enterprises.

Below are the gross incomes and shares therefrom of the college in the different production projects for the school year 1976-1977.

Project	Project Manager/Instructor	Gross Income	School Share of Net Income
Vegetable Crops (at Balili)	Elmo O. Sano	P 96,823.50	P 29,047.05
H.S. Canteen	Victoria D. Tumbaga	---	12,978.98
Ladies Dormitory	Esther R. Hufana	---	11,140.00
Vegetable Crops (at the Swamp)	Dario D. Dampilag	36,008.77	10,802.63
- do -	Ramon M. Bocalan	26,864.33	8,059.30
- do -	Juan B. Martes	24,950.80	7,485.24
- do -	Gregorio G. Bilango	24,672.20	7,401.66
Floriculture	Araceli C. Ladilad	14,579.67	4,373.99
College Canteen	Ofelia N. Estepa	---	4,199.17
Pomology	Benjamin B. Dinas	5,438.03	1,631.41
RSDC Guest House	Isidro B. Viado	---	428.00
Agri-business	Carlos T. Buasen	617.47	185.24
T o t a l s		<u><u>P230,054.70</u></u>	<u><u>P 97,733.17</u></u>

CHAPTER IV

ADMINISTRATION AND SUPERVISION

A. Fiscal Support

For the period July 1, 1975 to December 31, 1976, the National Government allocated P5,106,639.56 for the principal special budget of the college.

The sum was allotted for the following:

Personal Services

Salaries	P2,143,351.63
Wages (student assistants, agricultural and emergency laborers).....	184,746.97
Honorarium and living allowances	177,410.30
Retirement gratuity	12,180.48
Medicare and GSIS life and retirement premiums	183,366.81
	<u>P2,701,056.19</u>

Maintenance and Operating Expenses

Traveling expenses	68,866.60
Supplies and materials	759,682.74
Sundry	240,297.23
	<u>P1,068,846.57</u>

Capital Outlay

Construction	1,207,438.03
Equipment	127,059.02
	<u>P1,334,497.05</u>
Total	<u><u>P5,104,399.81</u></u>

An unexpended balance of P2,239.75 was realized at the end of the fiscal year.

B. Facilitative Services

General administration, auxiliary, and supportive functions were carried out by the facilitative services. These services were organized into line and staff units under the following departments: (a) office of the President, (b) budget, finance, and accounting services, (c) general services, and (d) security unit.

1. Clerical Force

The clerical force were not only confined within the different departments carrying out the activities of general administration, but were also distributed in the different offices of the supervisors of the different curricular programs, research and extension services.

Conferences had been held to acquaint the clerical personnel with the policies and latest trends on procedure and form in the preparation of reports and correspondence. These sessions also served as occasions for evaluating their performances.

The seminars, conferences, and workshops attended by selected clerical personnel were on less control manage-

ment, safety administration, public personnel administration, personnel action, records management, government media communicators, and supply management.

Professional growth was also given impetus by encouraging clerical employees to pursue further studies in the evening in Baguio City, and in taking civil service examinations.

2. Budget, Finance, and Accounting Services

The budget director and three employees participated in regional and national conferences, seminars, and workshops aimed at upgrading their competencies.

Topics taken up in those activities were budget preparation, execution, and accountability; collection and disbursement; and fiscal administration.

3. Internal Auditing Service

Pursuant to MSAC Administrative Memorandum No. 2, dated July 16, 1976, the internal audit unit was reorganized into an internal audit committee headed by the administrative officer as chief. The reorganization increased the number of personnel involved in internal audit.

3.1 Share of Net Income from Production Projects.---

The total share of the college from the net income from the production projects of vocational agriculture instructors and/or managers for the fiscal year ending June 30, 1977 was P97,733.17 compared to P90,375.26 of the same period last year. The increase amounted to P7,357.91.

3.2 Top Net Income Producers. --- For purposes of comparison, the top five producers who contributed to the school share of the net incomes from the different projects for the fiscal years 1975-1976 and 1976-1977 are listed hereunder:

Fiscal Year 1975-1976

<u>Name of Project In-</u> <u>structors/Managers</u>	<u>School Share of</u> <u>Net Production</u>
Elmo O. Sano	P 23,526.89
Juan B. Martes	18,334.83
Gregorio G. Bilango	9,209.70
Ramon M. Bocalan	8,077.31
Dario D. Dampilag	7,019.26

Fiscal Year 1976-1977

Elmo O. Sano	P 29,047.05
Dario D. Dampilag	10,802.63
Ramon M. Bocalan	8,059.30
Juan B. Martes	7,485.24
Gregorio G. Bilango	7,401.66

4. Security Unit

Peace and order was satisfactory on the campus during the school year 1976-1977. This was made possible through

the vigilance of college authorities. Security and protection of life and property were provided by the college security personnel and security guards of the Veterans Intelligence Security Agency (VISA), Manila.

A perimeter barbed-wire fence was put up at the southern portion of the site of the NSAC Elementary Laboratory School to prevent trespassers from coming in and passing through the campus.

In front of the NSAC Elementary Laboratory School and NSAC General Secondary Laboratory School, a concrete fence was constructed to prevent intruders.

The sites of the two laboratory schools together with the adjacent main campus to the north were under a 24-hour guard shift.

To help maintain discipline, all students entering the campus were required to pin ID cards on their lapels.

There was no evidence of student activism. The BETA and APO were not authorized to organize and operate. Known members were under surveillance by the student police themselves who submitted periodic reports to the security officer.

C. Personnel Development

1. Categories of Personnel

The number of personnel by categories covering the periods under review follows:

1.1 Strength as of December 31, 1976

a. Teaching staff	99
b. Classified and non-teaching	65
c. Supportive	<u>40</u>
Total	<u>204</u>

1.2 Strength as of June 30, 1977

a. Teaching staff	173
b. Classified and non-teaching	80
c. Supportive	<u>40</u>
Total	<u>299</u>

2. Faculty Scholarships

Deserving teachers were recommended to avail of scholarships and training grants offered in the country and abroad. The college has a policy of allowing a maximum of four instructors to be on study leaves, subject to the availability of scholarship grants.

2.1 On-going Scholarships. -- Below are the number of recipients of on-going scholarships by curricular levels and specializations:

a. Masteral Level

MS Agronomy, UPLB	2
MA Food Technology, UP-Diliman	1
MA Practical Arts, PCAT	1
MS Soils, UPLB	1
MS Botany, UPLB	<u>1</u>
Total	<u><u>6</u></u>

b. Doctoral Level

Ph.D. Soils Science, UPLB	1
Ph.D. Agronomy, UPLB	<u>2</u>
Total	<u><u>3</u></u>

c. Foreign Scholarship

MS Animal Husbandry, Scotland, United Kingdom	1
--	---

2.2 Studies Completed Abroad. -- Two faculty members on scholarship abroad returned to duty, following completion of their studies, viz:

- a. Mr. Franco Bawang - Diploma in Horticulture Science, under the Colombo Plan, Wellington University, New Zealand; and
- b. Mr. Alfredo Tipayno - Training Program on Pomological Technology, Prefectural Scholarship Grant, Kochi, Japan.

3. Self-initiated Professional Growth

Eleven faculty members and employees had pursued studies leading to undergraduate and graduate degrees at their own expense in MSAC and in other private universities

in Baguio City, to wit:

a. Ph.D. English	2
b. Ph.D. Pilipino	1
c. MS, MSAC	5
d. BSPA, Lyceum of Baguio	1
e. MSPA, Lyceum of Baguio	1
f. MS Chemistry, SLU	1
Total	<u><u>11</u></u>

4. In-Service Education Programs

Some officials, teachers, and employees participated in professional conventions, conferences, seminars, and workshops sponsored by the Department of Education and Culture, Development Academy of the Philippines, Association of Colleges of Agriculture in the Philippines, Philippine Council for Agriculture and Resources Research, and other government and private entities.

These conventions, seminars, and workshops were re-echoed by the participants in general and special meetings of the college personnel.

4.1 Participants From General Administration. --

The number of participants from general administration is seven (7) headed by the college president.

4.2 Participants From the Academic Departments. --

The number of participants from the different academic

departments is distributed as follows:

a. Plant Science	2
b. Mathematics and Physics	1
c. Languages and Social Sciences	3
d. Agricultural Education	1
e. Agri-business and Economics	1
f. Home Technology	3
g. Physical Education and Athletics	5
h. Vocational and Agricultural Science Education	7
Total	<u><u>23</u></u>

4.3 Participants From Non-Academic Divisions and Offices. -- The number of participants from the non-academic divisions and offices is broken down, to wit:

a. Guidance Office	1
b. Health Services	2
c. Personnel and Records	2
d. Finance	6
e. Property	2
f. Extension and Continuing Education ..	1
Total	<u><u>14</u></u>

D. Physical Plant

The school sites, buildings, and equipment are being used to carry out the mission and statutory objectives of the college as a state educational institution.

1. The School Sites

The school sites fall under three categories, namely:
(a) reservation, 575.2802 hectares; (b) registered or titled

land, 46.4536 hectares; and (c) unregistered or untitled land, 78.5478 hectares. The aggregate is 700.2816 hectares.

1.1 Proposed Land Swap With Benguet Province. --

The college has agreed to exchange 54.0421 hectares of its stock farm for six (6) school sites registered in the name of Benguet Province, with a total area of 46.4485 hectares.

When the exchange will be effected, Benguet Province will make use of the 54.0421 hectares as a government center, providing sites for offices of the national and provincial governments.

The stock farm is identified as Lot 1, plan Swo-1-02-00003, sheet 1 (portion of Lot 1, In-66), covered by Executive Order No. 99, dated November 11, 1914, as amended by Proclamation No. 209, dated October 20, 1955.

A subdivision survey of the stock farm had been undertaken by the Province of Benguet. The survey returns are now being processed by District Land Office No. I-2.

1.2 Terminated Court Cases Involving the School Sites. -- Of the terminated court cases, the college lost eight (8) cases involving 12.5678 hectares, and won 11 cases covering a total area of 88.8574 hectares, summarized

hereunder:

Cases Lost by the College

<u>N a t u r e</u>	<u>No. of Cases</u>	<u>Total Area (Hectares)</u>
a. Unregistered school sites	3	1.5721
b. Unregistered school site (The Court denied the application for registration, but the applicant succeeded in getting title by free patent.)	1	0.5340
c. Released lands sought to be retained as school sites	2	5.4683
d. Recovery of possession of registered land, which was dismissed but without prejudice to refiling.	1	4.6640
Totals	<u>8</u>	<u>12.5678</u>

As will be noted in these lost cases, particularly a, b and c, the parcels of land subject thereof were either unregistered (untitled) or released tracts of land sought to be recovered by the college.

Pre-war documents of ownership of the unregistered parcels of land were either lost in World War II or in the fire that razed the administration building on April 23, 1965.

The case of d can still be refiled, and recovery of the property stands a good chance.

Cases Won by the College

<u>N a t u r e</u>	<u>No. of Cases</u>	<u>Total Area (Hectares)</u>
a. Registered school sites	4	41.8097
b. Unregistered land	1	0.0371
c. Reserved school sites	5	46.6306
d. Released land sought to be retained	1	0.3800
Totals	<u>11</u>	<u>88.8574</u>

1.3 Pending Court Cases. -- A total of 18 cases are still pending resolution, five (5) in the Court of Appeals and 13 in the Court of First Instance, more particularly described as follows:

<u>N a t u r e</u>	<u>No. of Cases</u>	<u>Total Area (Hectares)</u>
a. Court of Appeals cases	5	120.4196
b. Petitions for judicial confirmation of title	7	20.0417
c. Recovery of possession	<u>6</u>	<u>21.1105</u>
Totals	<u>18</u>	<u>161.5718</u>

2. School Buildings

The college as of this writing has 40 buildings being used for instruction, of which 27 are for agri-sciences instruction and 13 are for social sciences instruction.

The 27 buildings for agri-sciences instruction contain 39 classrooms and 33 laboratory rooms. Six of these buildings with 34 classrooms are also used for social sciences instruction.

A total of 44 classrooms are contained in the 13 buildings that are used solely for social sciences instruction.

There are 31 other school buildings, of which 28 are cottages for residential purposes, one (1) girls' dormitory, one (1) infirmary, and one (1) administration building.

3. Equipment

The equipment are classified as (a) office, (b) classroom, (c) home economics, (d) medical-dental, (e) shop, (f) heavy equipment and motor vehicles, (g) athletics, and (h) books.

E. Board Resolutions Approved

The Board of Trustees passed and approved 77 resolutions in seven meetings held within the period June, 1976 to May, 1977.

Among the most important resolutions passed and approved were the following:

Series of 1976

<u>Res. No.</u>	<u>S u b j e c t</u>
28	Approving in principle the Agreement between MSAC and the Province of Benguet whereby Benguet Province would turn over some 46.4494 hectares of school sites that are in its name to MSAC, and MSAC would release some 50 hectares of its reservation at the stock farm to the Province.
29	Approving the integration of the Ilang Elementary School and the Benguet Provincial High School to MSAC as laboratory schools of said College.
30	Approving the Memorandum of Agreement between MSAC and the Municipal Government of La Trinidad whereby the latter was allowed to let its waterworks pipes pass through the College campus under certain terms and conditions.
31	Approving the grant of P300.00 monthly stipend to four (4) scholars of the College for MS and MA at the UPLB and UP Diliman.
38	Approving the trip of the College President to Seoul, South Korea in connection with the 2nd Biennial Conference of the Association of Asian Agricultural Colleges and Universities (AAACU), held in Suwon, Korea, on October 11-16, 1976.
42	Granting authority to the College President to sign for and in behalf of the College documents relative to the conveyance of portions of parcel 1 of TCT No. 140 to the Benguet General Hospital, Municipal Government of La Trinidad, the Boy and Girl Scouts of the Philippines, and other government agencies.
46	Approving the position of the Board to submit a list of nominees to the President of the Philippines from which the President may appoint one more member of the Board of Trustees of the College pursuant to PD No. 982.

Series of 1976

Res. No.

SUBJECT

- 52 Approving and submitting four (4) nominees: Attys. G.P. Keith, B., Suanding, S. Dangwa, and A. Cosalan to the President of the Philippines from which the President may appoint one as member of the Board of Trustees of the College pursuant to PD No. 982.

Series of 1977

- 4 Approving the graduation of 230 candidate from the various curricular offerings of the College, school year 1976-1977.
- 11 Approving the revised Organizational Structure of MSAC as an amendment to Res. No. 49, s. 1971.
- 12 Approving the actual implementation of the integration of the Ilang Elementary School and the Benguet Provincial High School to MSAC, and recommending the issuance by the Secretary, DEC of a pertinent Office Order to this effect.
- 13 Approving the change in the position-designation of all officials, teachers, and employees of the Eland Elementary School and the Benguet Provincial High School as a result of the integration of the two schools to MSAC.
- 14 Approving the creation of two vice-president positions: VP for Development and VP for Academic Affairs effective July 1, 1976 and January 1, 1977, respectively.
- 15 Approving the designation and appointment of Dr. Saturnino M. Ocampo, Jr. as Vice-President for Development effective July 1, 1977.
- 17 Approving the Principal Special Budget of MSAC for calendar year 1977, in the total amount of P5,168,000.00, available for expenditures.
- 19 Approving the opening of a new program leading to the degree of Bachelor of Science in Agricultural Engineering, effective the first semester, SY 1976-1977.

Series of 1977

<u>Res. No.</u>	<u>S u b j e c t</u>
20	Approving the suspension of the two-year Forest Ranger Course, effective the first semester, SY 1976-1977.
28	Authorizing the College to conduct Saturday/evening classes for working people under certain guidelines promulgated by the College.
33	Confirming the promotional appointment of 34 professors/instructors, 10 new instructors, and 13 substitute instructors, effective June 1, 1977,
35	Approving the appropriation for and payment of P40,000.00 for the house of Mr. and Mrs. Federico E. Castro, as earlier decided and approved by the Board.
38	Approving the revision and/or shortening of all degree programs of the College from five to four-year courses only, except BS Agricultural Engineering which remains as a five-year course.
42-A	Approving the grant of full (100%) scholarships to the enrollees in the special agricultural science sections or classes in the secondary vocational agriculture curriculum, effective June, 1977.

During the period under review, the composition of the MSAC Board of Trustees was beefed up with the addition of the Executive Director of NEDA, Region I as member pursuant to Presidential Decree No. 982, issued by the President of the Philippines on August 18, 1976.

The appointment of one more member pursuant to the same decree may be forthcoming, with the submission by the Board of a list of four (4) nominees from which the President of the Philippines may select and appoint one.

CHAPTER V

STATUS OF FIVE-YEAR DEVELOPMENT PLAN AND PROGRAM

A. Curriculum

1. Laboratory Schools

With the integration of the former Ilang Elementary School and the former Benguet Provincial High School, plans are being made to re-orient these two schools to serve as laboratory of the teacher education programs and other innovative educational ideas.

Work-oriented educational curriculum is being worked out for trial in these laboratory schools.

2. Science Curriculum

The present secondary vocational education programs, namely, vocational agriculture and vocational homemaking, in the other MSAC high school is also undergoing re-direction with the opening of the science curricular program. This is in response to the demand of the times as seen in government priority programs and projects.

3. Reducing Length of Degree Programs

The Board of Trustees approved the shortening of the length of the following degree programs from five to

four years, effective the first semester of school year 1977-1978:

- a. Bachelor of Science in Agricultural Education;
- b. Bachelor of Science in Animal Technology;
- c. Bachelor of Science in Home Technology;
- d. Bachelor of Science in Agriculture;
- e. Bachelor of Agri-business Management; and
- f. Bachelor of Science in Forestry.

Bachelor of Science in Agricultural Engineering, however, shall remain a five-year course.

4. Change of Course Nomenclature

Also approved by the Board of Trustees is the change in name of the Farm Mechanics course to Agricultural Mechanics. Deferred for further study is the proposal to change the Home Technology course to Home Economics.

5. Additional Major Fields of Study

There is a felt need for the opening of additional major fields of study, among which are plant pathology, botany, entomology, and horticulture. The only constraints, however, are the inadequacy of qualified instructors and professors and instructional facilities.

6. Graduate Programs

The present ~~graduate~~ graduate programs have been enriched with the opening of additional major fields of study, namely, soils science and agricultural extension.

Agronomy was changed to horticulture to make it more relevant to the presence of expertise and the actual nature of the program offered.

B. Personnel Requirement

Additional teaching and non-teaching personnel are needed to meet the growing population in all the curriculum levels of instruction.

1. Needed Teaching Positions

Four new instructor positions are needed in the elementary and high school programs. For the present, however, faculty requirements will be maintained.

In the collegiate level, instructors are needed in the following fields of specialization:

<u>Area</u>	<u>Number</u>
Plant Pathology	2
Microbiology	1
Animal Science	2
Plant Science	1

<u>Area</u>	<u>Number</u>
Mathematics and Physics	2
Veterinary Science	2
Agricultural Engineering	2
Agri-business and Economics	1
Home Technology	1
Botany	2
Agricultural Chemistry	2
Forestry	<u>2</u>
Total	<u>20</u>

2. Needed Non-Teaching Positions

Below are the needed number of non-teaching personnel:

<u>Position</u>	<u>Number</u>
Security Guard	5
Clerk-Typist	4
Legal Officer	1
Secretary	2
Executive Assistant	1
Management Analyst	1
Social (Scientist) Researcher	1
Janitor	3
Total	<u>18</u>

C. Building Projects

As already stated in the Highlights of this annual report, two of seven buildings slated for completion for 1975-1977 were finished. These are the soils-chemistry building and the agricultural meteorology building.

A third edifice, the agricultural engineering

building, is 75 per cent completed. It is expected to be finished by the middle of school year 1977-1978.

Below are the four remaining buildings that were not constructed within the target dates for 1976-1977:

<u>Expected Date of Completion</u>	<u>Description</u>	<u>Estimated Area (Sq.m.)</u>	<u>Estimated Cost</u>
1976-1977	Gymnasium-Auditorium, reinforced concrete- steel with covered walk	4,200	P4,200,000.
1976-1977	Biological Science Building, reinforced concrete	1,000	900,000.
1977	Institute of Plant Breeding	1,200	1,000,000.
1977	Women's Residence Hall, reinforced concrete	<u>9,600</u>	<u>9,600,000.</u>
	Totals ..	<u>16,000</u>	<u>P15,700,000.</u>

These buildings and others in the five-year development plan will be funded through an increase of the national allotment, allocations from the Public Works funds, and loans.

Under consideration is the possibility of obtaining loans from the World Bank through the Educational Development Projects Implementing Task Force (EDPITAF).

D. Funding of Development Plans and Programs

1. Capital Outlays

Funding will come mostly from the national government and research organizations.

The UPLB Institute of Plant Breeding is underwriting the bulk of the expenditures for the MSAC-UPLB-IPB project, situated at the Swamp, Poblacion.

The Philippine Training Centers for Rural Development (PTC-RD), created under Presidential Decree No. 1145, will be funded through the 4th World Bank Loan. MSAC is one of the five training centers.

Presidential Decree No. 1107 also established the Northern Philippine Root Crops Research and Training Center (NPRRTC), situated at MSAC, with an initial funding of six million pesos.

2. Faculty Development Programs

During the periods under review, the college spent P140,000.00 for the salaries, stipends, books, and clothing allowance of faculty members on scholarships or training grants here and abroad.

E. Problems and Recommendations

The following recommendations are made in connection with the problems they are associated with:

1. More funds to construct additional classrooms and laboratory buildings;
2. Construction of multi-storey residence halls for students;
3. Better salaries for faculty and staff to improve the attraction and retention power of the college to qualified personnel;
4. Need to change the MSAC charter, so that more development programs and projects other than agriculture related areas may also be served.

RESEARCH ABSTRACTS

JULY 1976 - JUNE 1977

ALAY-AY, GODFREY. 1977. The effects of different levels of molasses on broiler production under MSAC condition. Undergraduate thesis.

The highest gain in weight and the most efficient birds in the conversion of feeds were those fed with broiler mash mixed with 3 per cent molasses. Birds given with broiler mash without molasses had the highest average feed consumption.

ARCELLANA, SAMUEL S. 1977. The effect of different kinds of antibiotics on the growth of growing and fattening pigs under MSAC condition. Undergraduate thesis.

It was found that there was no significant difference in the total feed consumption, gain in weight, feed efficiency, final weight and cost of producing a kilogram gain in weight of the pigs as affected by the mixture of afsillin, Bayo-N-ox and Fura-vim mixed with growing and fattening mash. It was noted further that there was no difference between the use of plain growing and fattening mash.

BALAGTAS, BERNARDO N. 1977. The comparative effects of five different insecticides on corn earworm. Undergraduate thesis.

In terms of larval population count and marketable yield Thiodan and Folidol M-45 were highly significant over the other treatments, respectively. Folidol M-45 was also found significant in terms of marketable ears.

CABRAL, GREGORIO P. 1976. The farming program of vocational agriculture students in Ilocos Norte, 1975-1976. Master thesis.

The finding included the following: majority of the Supervised ~~Farming Program~~ students conducted

their projects inside the school campus and lesser number of off-campus located at an average distance of 1.5 kms. away from the school. All the student respondents consulted their vocational agriculture teacher in planning their projects. Most of the projects were visited everyday. A greater number of supervised farming program students were in groups. The prevailing number in each group was four, although, most of them chose to be alone when given the opportunity. Project records were kept by almost all of the students concerned. A number of students above first year were assigned to directed projects.

There were varied crop enterprises the supervised farming program students were engaged in, although most of the areas used did not come up to the recommended standard. There were several animal enterprises managed by the students, but the scope did not meet the minimum requirement. However, the supervised farming program students were willing to increase the scope of their projects if there is a possibility.

The sources of capital came mostly from parents, while the rest came from banks, other persons, the school concerned, and the student themselves. Generally, supervised farming program students do not pay rent on land use in the supervised farming program. Only a few from Ilocos Norte Agricultural College, were on rental basis.

A majority divided their income at a sharing rate of 30-70, the student getting bigger percentage. The amount of investments, gross income and net income were within the range of P1 to P500.00.

The three agricultural schools appear to have problems in common, although, the intensity and magnitude of such problems in each school differed much. The limited area, inadequate water supply, tight financial resources, and lack of implements and work animal were the most serious problems encountered by the supervised farming program student. Nevertheless, the students-respondents, tried their best to abate the problems by employing various solutions within their means.

CARANTES, JAIME C. 1977. Effect of the duration of weed competition on the growth and yield of chinese cabbage. Undergraduate thesis.

Plants needed from planting to harvesting had the highest yield per unit area, largest diameter of heads, the widest leaf area and the heaviest weight of total vegetative parts. However, plants weeded from planting to harvesting, plants weeded after 20 days and plants weeded 30 days after planting to harvesting did not make any significant difference in the growth and yield. The weed species, caused 55.2 per cent to 70.5 per cent yield reduction. Galinsoga plaviflora was very abundant followed by Eleusine indica

Since the most critical period of competition is from 20 to 30 days after planting, control measures should be applied within this stage of growth.

DATUD, FELIX S. 1977. A comparative study of six different insecticides against leaf miner of sweet pea. Undergraduate thesis.

Results revealed that Hostathion was found to be the most effective as compared to the other test chemicals in terms of rate of growth, yield and larval population count was significant. However, its effect on the larval population count was not significant. Other insecticides that exhibited significant differences as compared with the control in rate of growth were Azodrin 168, Thiodan, Furadan and Metasystox. Although no significant differences were noted from the different treatments in terms of larval population count, Hostathion had the lowest mean which showed that it gave a better control than the other insecticides.

JAMES, JUAN J. 1977. A comparative study of five different insecticides on tomato fruitworm. Undergraduate thesis.

All the insecticides used namely: Hostathion, Tamaron, Phsdrin, Dipel and vegetox were effective in controlling the fruitworm. The protection of these chemicals however, varried. Hostathion and Tamaron were much effective against fruitworm than the rest

of the chemicals in terms of larval count, number of fruits damaged and the weight of non-marketable yield. Both, however, did not produce significant result over the rest of the treatments based on marketable yield. The treated plants were found not to differ significantly with the untreated plants in terms of marketable fruits.

KHUMCHOO, SILAPACHAI. 1977. A comparative study on the use of pellet and mash feed with some green feeds for rabbits. Undergraduate thesis.

The rabbits fed with mash feeds had slightly higher feed consumption, final body weight, and gain in weight than those given pellets. On the other hand, feed conversion efficiency was slightly lower among rabbits fed with mash feeds. The use of mash feeds to produce a kilogram gain showed significantly lower cost than the use of pellets.

Feed supplements - camote with kikuyo, and camote with Adjeratum - had similar effects on the feed consumption, final body weight, final gain in weight and feed conversion efficiency of rabbits. For better profit, however, rabbit raisers should use mash feeds if the price of mash feeds is expensive.

LEUNG, ALBERT B. 1976. A comparative study of the feeding values of ground camote, ground corn, and dried mungo pulp as feed supplements for broilers. Undergraduate thesis.

Ground corn, ground camote, and dried mungo pulp can be used as feed supplements. The results also showed that ground corn, and dried mungo pulp can be profitably used as feed supplements. Birds given ground corn and dried mungo pulp exhibited lower cost per kilogram gain in weight.

The different treatments showed significant effect on the feed consumption. However, no significant differences were observed in the final weight, gain in weight, feed conversion efficiency, and percentage mortality.

LICDAN, JOSEPH B. 1976. The effects of the size of Irish potato seedpieces on the yield. Undergraduate thesis.

There were significant differences in the height of the plants, in the total number of tubers, and in the weight of non-marketable tubers as affected by the different sizes of potato seedpieces. The big-sized seedpieces (equal to or greater than 100 grams) produced the tallest plants, the greater number of tubers, and the greatest weight of non-marketable tubers. Likewise, the marble-sized seedpieces (less than 50 grams) gave rise to the shortest and most of the non-marketable tubers. The medium-sized seedpieces (75 to 99 grams) ranked second to big-sized seedpieces (50 to 74 grams).

The effect of the different sizes of potato seedpieces on the weight of marketable tubers did not differ.

MACASIEB, LOURDES W. 1977. Study on self and cross incompatibility and blooming habit of some varieties of the species *oleracea* and *pekinensis*. Undergraduate thesis.

The varieties and species used were Yoshin Summer and F₁ K-K for *oleracea* and Black Behi and Pak-hoi for *pekinensis*.

It was found that the percentage of self-incompatibility of species *oleracea* and *pekinensis* were 87% and 62.4% respectively. Likewise, *oleracea* showed higher percentage of cross-incompatibility having 54.05% while *pekinensis* had only 24.14%. There were no significant differences among the varieties of the two species of both the self and cross incompatibility.

The number of seed per pod developed was directly proportional followed with the percentage of incompatibility. The higher the percentage of both self and cross incompatibility, the lower the number of seeds formed per seed pod developed. On the other hand, the lower the percentage of self and cross incompatibility, the higher the number of seeds formed per pod.

The mean number of days from planting to the first flower opening did not differ among varieties but not between the species. It took 240.12 days for oleracea to flower from planting and 39.50 days for pekinensis. Similarly, oleracea had more days from flower opening to seed setting. Oleracea took 4.38 days to flower while pekinensis took 2.38 days.

There were more flowers that opened per day in pekinensis than that of oleracea. An average of 3.75 opened flowers per day in pekinensis while an average of 2.5 flowers opened per day in oleracea. The differences among the treatment combinations was slight and it was insignificant among the varieties.

At 60 to 73.5 F, oleracea flowers opened at 8 to 10:00 a.m. while pekinensis flowers opened at 6:30 to 10:30 in the morning.

The pollen of oleracea flowers was viable from the time of dehiscence which occurred 30 minutes to 2 hours from the time of opening and remained viable until 20 to 24 hours after dehiscence from 9:00 a.m. to 5:00 p.m. during the day. Pekinensis showed longer pollen viability than oleracea. The time of pollen viability of pekinensis was from 6:00 a.m. to 5:00 p.m. and the pollen viability was from the time of dehiscence up to 48 to 53 hours after.

The stigmatic receptivity of oleracea was 24 hours or less before flower opening and remained receptive in 24 hours after opening. The time of receptivity was anytime from 9:00 a.m. to 3:00 p.m. on the other hand, pekinensis showed stigmatic receptivity earlier, about 48 hours before the flower opened which lasted up to 72 hours after the flower opening. Receptivity in pekinensis was from 6:00 a.m. to 6:00 p.m.

MEJIA, ALFREDO M. 1976. The effects of organic and inorganic fertilizers on the growth and yield of weet pepper. Undergraduate thesis.

There was significant differences among the different treatments as regards the number of flowers

formed, number of fruits developed and the size of the fruits as influenced by the different rates of organic and inorganic fertilizers. The plants applied with 240-240-40 kilograms of NPK per hectare registered the tallest growth. They were more vigorous and significantly greener as evidenced by their appearance. However, plant applied with four tons of organic fertilizers produced the most fruits in terms of weight. An increase in the amount of organic fertilizer from two to four tons per hectare increased the yield and size of the fruits of plants. On the other hand, an increase in the rate of organic fertilizer increased the growth from 80-80-80 to 240-240-240 kilograms NPK per hectare.

NAKVANICH, PAITON. 1976. Effect of different spacing and rate of fertilizer application on the growth and yield of carrot. Master thesis.

Of the four distances of planting, the plants with intermediate spacings of 20 x 9 cms and 15 x 12 cms grew taller than those plants which were either widely spaced (20 x 12 cms) or closely spaced (15 x 9 cms). They also grew faster in terms of root size based on weight.

Among the three different rates of fertilizer application, however, there was no significant difference. But the 90-90-90 kgms of NPK per hectare rate proved to be optimum for carrot under MSAC condition over the other two rates of 135-135-135 and 180-180-180 kgms of NPK per hectare. Likewise, there was no significant effect of the interaction among the distances of planting and rates of fertilizer application.

OPENA, BONIFACIO L. 1977. A comparative study of the different insecticides in the control of snout beetle in strawberry. Undergraduate thesis.

It was noted that the most effective chemical in controlling the adult beetle was shell Azodrin 202. The most effective chemicals among the insecticides used in controlling the grubs (larvae) were Temik 10G, Furadan 3G and Cytrolane 3G.

PALANGDAN, NESTOR T. 1977. Population density and weed control study on chinese cabbage. Undergraduate thesis.

The plots planted with fifteen seedlings spaced at 45 x 60 cms per three square meters produced the highest crown height, had the second highest weight of marketable yield but had a lesser cost of weeding and weed population. Those with twenty seedlings spaced at 30 x 45 cms per three square meters had slightly lower height than those with fifteen and ten seedlings spaced at 60 x 75 cms per **three** square meters which produced the highest weight of marketable yield, had the second tallest crown height, but had the least cost of weeding. The interaction between the methods of weed control on the population density is highly significant only on the weight of marketable yield and cost of weeding.

PAMAQUED, AGUSTIN O. 1976. Degree of pruning and rate of fertilizer application on the growth and yield of tomato. Undergraduate thesis.

Neither pruning nor fertilizer rate significantly affected the height although the fertilizer rate of 150-300-150 kilograms per hectare of NPK caused the plants to live longer thereby making possible more number of pickings.

Plants with a single branch produced more fruits than those with three branches and the control. Likewise, fertilized plants produced more fruits than the untreated ones. Plants with a single branch applied with 150-300-150 kgms of NPK per hectare significantly produced more yield than any of the other treatment combinations.

Pruning did not produce variation in fruit size.

PASALO, ALEJANDRO A. 1977. Effects of boron and calcium on the growth and yield of Irish potato. Undergraduate thesis.

Plants treated with 14 kilograms of borax per hectare in combination with 1,500 kgms of CaCO_3 out-yielded the rest of the plants that received different amounts. Boron and calcium greatly increased the number of tubers formed but lesser effect on the growth of the plants was observed. Borax applied at a rate of 12 kgms. per hectare gave the lowest number of cracked tubers. This is in combination with 1,000 kgms of CaCO_3 and without CaCO_3 .

Liming at a rate of 1,500 kgms of CaCO_3 per hectare increased the soil pH from 4.4 to 6.3. It is also increased the calcium content of the soil from 7.25 to 20.25 m.e. per 100 gms of soil but the calcium content of the different plant parts was not affected.

SRITHONGCHIM, SOMNUK.. 1976. The effects of different methods and rates of fertilizer application on the growth and yield of two varieties of garden pea. Master thesis.

The combination of fertilization through soil and foliar fertilization with a complete fertilizer produced better yield in terms of weight of young pods for vegetable used. When fertilizer was applied through soil, the best rate of fertilizer application per hectare was found to be 80-80-80, 100-100-100 if applied through soil and leaf is best recommended.

VIRAWONGPROM, AWAT. 1976. The effects of different rates of fertilizer and population density on the growth and yield of head lettuce. Master's thesis.

The two strains, Great Lakes 54 and Great Lakes 366, did not differ in all the characters observed, namely: leaf area, number of leaves, number of both wrapper and non-wrapper leaves, core length, leaf dry weight, head solidity, and yield.

Plants spaced at 60 x 20 cm yielded more per unit area than plants spaced at either 60 x 30 or 60 x 40 cm. The growth, yield, and solidity of head increased with the increasing rate of fertilizer

application from 0-0-0 to 300-300-300 kg of NPK/ha. However, it was found that 100-100-100 and 200-200-200 kg of NPK/ha are economically the optimum rate for head lettuce in terms of yield and solidity of head, respectively. Meanwhile, the number of wrapper leaves was positively correlated with the weight and solidity of head.

ALIPIT, PERCIVAL B. 1976. Planting density and organic fertilizer study on the growth and yield of potato. Graduate thesis.

Highest total yield of tubers was attained at the 80,000 density of planting; but notable yield of marketable tubers was obtained with 60,000 density while lowest yield was attained at the 40,000 density of planting. Greatest quality of tubers was obtained at the 60,000 planting density. At the 80,000 density of planting, development of smaller tubers was comparatively high.

The application of a mixture of 4 and 2 cubic meters of chicken manure and grass ash, respectively, per hectare had comparable effect with higher treatments of organic fertilizer on both net and gross yields of potato.

Haulm growth, leaf area and number of main stems were positively correlated with tuber development.