

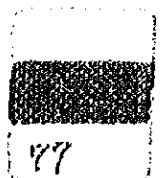
農林 52-55

タイ、カセサート大学施設整備計画 事前調査報告書

《資料編》

昭和52年 8 月

国際協力事業団



農林 52-55

タイ、カセサート大学施設整備計画 事前調査報告書

《資料編》

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昭和52年 8 月

国際協力事業団
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国際協力事業団

国際協力事業団		
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I 調 査 団 員

氏 名	担 当	所 属
有 松 晃	団 長 総 括	国際協力事業団理事
近 藤 典 生	教 育 行 政	東京農業大学教授
栗 原 嘉 一 郎	施 設 計 画	筑波大学教授
渡 辺 昇	施 設 設 計	農林省農林水産技術会議事務局整備課
中 精 一	研 究 行 政	農林省農林水産技術会議事務局副研究管理官
山 村 宗 仁	任 場 整 備	農林省構造改善局設計課
大 畠 幸 夫	協力企画、業務調整	国際協力事業団専門調査役

Ⅱ 調 査 日 程

	午 前	午 後
7月17日(日)	東京発10:50 JL461	バンコク着17:45
18日(月)	大使館、事業団事務所と協議	DETEC(次長)表敬
19日(火)	農業大臣表敬	大学庁長官表敬 (歓迎会)
20日(水)	KU計画変更聴取	KU計画変更聴取、資料要求
	小グループ協議	(経=谷村事務官マニラへ)
21日(木)	カンバンセン・キャンパス視察	
22日(金)	コーラート・パクチョンへ出発	
	小グループはバンケン及びATIの建物視察	
23日(土)	コーラート・パクチョン視察	
	小グループは建築準備等資料収集	
24日(日)	バンコクへ	団員ミーティング
25日(月)	熱研職員から情報収集	KUと全体協議
26日(火)	KUと小グループ別資料収集	(在タイ専門家と打合会議)
27日(水)	資料整理、報告書作成	
		小グループは大使館、事務所と協議
28日(木)	資料整理、報告書作成	KUと最終会議
	小グループは大使館、事務所と協議	(KUメンバーと打合会議)
29日(金)	英文レター作成、手交	
30日(土)	資料整理、報告書作成	
31日(日)	帰 国	

III. 団長レター

Prof. Rapee Sagarik

Rector, Kasetsart University

KASETSART UNIVERSITY DEVELOPMENT PROJECT

Following the request to the Government of Japan by the Government of Thailand for a grant and technical cooperation concerning the project "Kasetsart University: Strengthening Research and Extension Service Facilities in Agriculture", a survey team organized by the Government of Japan and the Japan International Cooperation Agency was dispatched to Thailand for an exploratory survey and consultation.

The team stayed in Thailand from 17 to 31 July 1977. In view of the urgency with which the Kasetsart University is seeking to implement the project, we considered that it might be useful to submit, at this stage, a preliminary report on the observation by the survey team as attached herewith.

I am happy to inform you that the team was able to understand the significance of the project and to recognize that the project is highly feasible. It is to be hoped that both sides will take necessary procedures to accelerate the progress of the project.

I take this opportunity to express our appreciation and thanks to you and the staff of the Kasetsart University for most helpful cooperation and courtesies extended to me and to my colleagues during our stay in Thailand.

July 28, 1977

Bangkok

Akira Arimatsu

Leader

Japanese Survey Team

for Kasetsart University Development Project

Kasetsart University Development Project

Preliminary observation of the survey Team

1. Among the universities in Thailand which offer degrees in agriculture, Kasetsart University is by far the largest and is the only one that offer graduate courses in agriculture, forestry, fisheries and related sciences. The university's function is not confined to instructions, but covers research and extension, and its activities are closely connected with those of the Ministry of Agriculture and Cooperatives. Therefore, cooperation of the Government of Japan in the development of research and extension service of Kasetsart University will have a great significance on the development of agriculture in Thailand.
2. The program of the development project of the Kasetsart University has been prepared through most exhaustive discussions and by careful preparatory works by the staff of the University, and we have been impressed with the fervent enthusiasm throughout the university for the realization of the project. There are many qualified staff for the operation of the project and necessary budgetary arrangements are being made by the University.
3. It was noted that the plan of the construction of facilities and the technical cooperation for research and extension activities including their preparation to which cooperation from Japan has been requested are consistent with the master plan of Kasetsart University Expansion Program.
4. It was recognized that the facilities and their arrangement are well designed to meet the necessity of expansion of activities on research and extension service in each field, and due attention is also paid to staffing plan.
5. The items and their priorities in the request list of the University for a grant from the Government of Japan, as the result of discussion, between the University and the team, are as follows:-
 1. Central laboratory and greenhouse complex.
 2. Extension and training service center.
 3. Soil and fertilizer research center.
 4. Agricultural machinery and equipment center.
 5. Fresh-water fisheries research center.

6. Agro-industry technology research center.

It was noted that all of the six components of the project are highly important to agricultural development and well-being of small farmers in Thailand, and to long lasting mutually fruitful cooperation between Thailand and Japan, and deserve favourable consideration for the necessary support.

6. Careful consideration should be given to the specification and installation of immovable assets and equipment in preparing the basic design for most efficient utilization:
7. It is desirable that the preliminary draft of the basic design will be prepared by the University before a basic design team is sent from Japan.
8. Supply of electricity, water, gas and other utilities should be checked carefully whether they could assure the effectiveness of research activities. For instance, the installation of a generating plant and water cleaner in Kamphaengsaen campus may have to be considered.

IV. 要旨内容及び全体計画

KASETSART UNIVERSITY DEVELOPMENT: STRENGTHENING RESEARCH AND EXTENSION
SERVICE FACILITIES IN AGRICULTURE

1. プロジェクト構成要素の優先順位及び推定費用

ORDER OF PRIORITY AND BREAKDOWN OF BUDGETARY REQUIREMENTS OF PROJECT COMPONENTS

Order	Project Component (Center / Complex)	Estimated Cost (Baht)					
		Construction		Equipment		Total	
		Center / Complex	Unit	Center / Complex	Unit	Center / Complex	Unit
1	Central Laboratory and Greenhouse Complex	46,600,000		71,700,000		118,300,000	
1.1	Central Administrative Office (1,000 M ²)		3,000,000		2,800,000		5,800,000
1.2	Soil and Fertilizer Testing and Applied Research Unit (1,200 M ²)		3,600,000		4,300,000		7,900,000
1.3	Postharvest Research Unit (1,200 M ²)		3,600,000		4,600,000		8,200,000
1.4	Plant Pest Clinic and Quarantine Unit (500 M ²)		1,500,000		2,100,000		3,600,000
1.5	Seed Technology Unit (1,200 M ²) (including seed processing and storage facilities)		3,600		6,500,000		10,100,000
1.6	Culture Collection Unit (500 M ²)		1,500,000		3,000,000		4,500,000
1.7	Environmental Science Unit (500 M ²)		1,500,000		2,700,000		4,200,000

Order	Project Component (Center / Complex)	Estimated Cost (Baht)					
		Construction		Equipment		Total	
		Center / Complex	Unit	Center / Complex	Unit	Center / Complex	Unit
1.8	Central-Biochemistry Unit (1,000 M ²)		3,000,000		12,550,000		15,550,000
1.9	Radioisotope Unit (500 M ²)		1,500,000		2,700,000		4,200,000
1.10	Type Specimen Unit(1,500 M ²)		4,500,000		1,500,000		6,000,000
1.11	Small Animal Laboratory (300 M ²)		900,000		1,300,000		2,200,000
1.12	Laboratory Maintenance Unit (200 M ²)		600,000		1,000,000		1,600,000
1.13	Agricultural Meteorology Station		200,000		1,800,000		2,000,000
1.14	Lysimeter Set-up		1,000,000		2,020,000		3,020,000
1.15	Controlled-Condition Unit (1,200 M ²)		3,000,000		15,780,000		18,780,000
1.16	Head House (800 M ² +200 M ²) (including fertilizer processing facilities)		3,000,000		6,050,000		9,050,000
1.17	Greenhouse Proper						
1.17.1	Glass house (10x30 M) 2 Units		1,000,000		1,000,000		2,000,000
1.17.2	Screen house (10x30 M) 14 Units		6,400,000		-		6,400,000
1.17.3	Lath house (10x30 M) 2 Units		500,000		-		500,000
1.17.4	Lath-Screen house (10x30M) 3 Units		2,700,000		-		2,700,000

Order	Project Component (Center / Complex)	Estimated Cost (Baht)					
		Construction		Equipment		Total	
		Center/Complex	Unit	Center/Complex	Unit	Center/Complex	Unit
2	National Agricultural Extension and Training Service Center	25,646,000		19,354,000		45,000,000	
	2.1 Administrative Building (690 M ²)		2,070,000		1,250,000		3,320,000
	2.2 Classroom Building(2,010M ²)		6,030,000		800,000		6,830,000
	2.3 Audio-visual Media Building and Auditorium(1,350 M ²)		4,050,000		8,854,000		12,904,000
	2.4 Printing Shop (441 M ²)		946,000		7,000,000		7,946,000
	2.5 Dormitory (2,400 M ²)		7,200,000		650,000		7,850,000
	2.6 Cafeteria (300 M ²)		750,000		250,000		1,000,000
	2.7 University Hotel (900 M ²)		2,700,000		450,000		3,150,000
	2.8 Housing Unit (300 M ²)		900,000		100,000		1,000,000
	2.9 Internal Road Work and Drainage Way		1,000,000		-		1,000,000
3	Soil and Fertilizer Research Center	9,625,000		8,200,000		17,825,000	
	3.1 Building (3,100 M ²)		9,300,000		8,000,000		17,300,000
	3.2 Glasshouse (120 M ²)		200,000		200,000		400,000
	3.3 Screenhouse (60 M ²)		75,000		-		75,000
	3.4 Lath house (50 M ²)		50,000		-		50,000
4	Agricultural Machinery and Equipment Center	10,000,000		23,000,000		33,000,000	
	4.1 Administrative office, classroom, conference room, reading room, etc.(1,000 M ²)		5,000,000		4,000,000		7,000,000

Order	Project Component (Center / Complex)	Estimated Cost (Baht)					
		Construction		Equipment		Total	
		Center/Complex	Unit	Center/Complex	Unit	Center/Complex	Unit
5	4.2 Workshop, Laboratory, Garage, etc. (3,000 M ²) Fresh-water Fisheries Research Center	4,600,000	7,000,000	2,000,000	19,000,000	6,600,000	26,000,000
6	5.1 Laboratory (400 M ²) 5.2 Nursery, Ponds, and Sedimen- tation and Filtration Unit Agro-industry Technology Research Center (2,000 M ²)	6,000,000	1,200,000 3,400,000	6,000,000	-	12,000,000	-
	Grand total	102,471,000		130,254,000		232,725,000	

Remarks:

- Expenditure needed for site development, movable furniture, supply and delivery of water and electricity to the project sites, and external drainage and sewage disposal facilities will be born by the Thai Government and, hence, is not included in the estimated budgetary requirements presented in the table.
- Equipment in the table includes air-conditioning facilities, permanent fixtures and heavy laboratory furniture. It is expected that some items of the necessary equipment will be supplied through technical assistance of Japan.

2. 人員配置計画

PERSONNEL

A. Tentative list of key personnel

I. Central Laboratory and Greenhouse Complex

Unit/name of key persons	Field of specialization
1. Central Administrative Office	
Dr. Sam-arng Srinilta	Soil physics
Dr. Thira Sutabutra	Plant virology
Dr. Supat Attatham	Plant pathology
2. Indoor Laboratory	
2.1 Soil and Fertilizer Testing and Applied Research Unit	
Dr. Visoot Verasan	Soil physics
Mr. Suradej Jintakanon	Mineral nutrition of plant
Dr. Piya Duangpatra	Soil fertility
2.2 Postharvest Research Unit	
Dr. Suranan Supatarapan	Plant physiology
Dr. Suraphong Kosiyachinda	Postharvest physiology
Mr. Vichai Korpraditskul	Fruit crop pathology
2.3 Plant Pest Clinic and Quarantine Unit	
Dr. Supat Attatham	Plant pathology
Dr. Pensook Tauthong	Insect physiology
2.4 Seed Technology Unit	
Dr. M. L. Anothai Choomsai	Cytogenesis
Dr. Chalermnar Chuayprasit	Seed pathology
Dr. Juangjan Duangpatra	Seed technology
2.5 Culture collection Unit	
Dr. Jaroon Kumnuanta	Microbiology
Mr. Charan Chettanachitara	Microbiology
Mrs. Chanya Pakkavesa	Veterinary pathology
2.6 Environmental Science Unit	
Dr. Suvit Sangthongpraow	Environmental biology
Mr. Pongsak Yuhun	Agricultural climatology

Dr. Kasem Chankao	Watershed conservation and management
2.7 Central-Biochemistry Unit	
Dr. Yongyut Chiemchaisri	Biochemistry
Dr. Thira Sutabutra	Plant virology
Mr. Amnart Tantivanid	Organic chemistry
2.8 Radioisotope Unit	
Mrs. Siranut Lamsreejan	Radiation biology
Mr. Adichart Buankiyapan	Nuclear physics
2.9 Type Specimen Unit	
Dr. Valuli Rojanavongse	Insect Taxonomy
Dr. Apisit Eiemnoh	Soil genesis
Mr. Chookchai Senawong	Zoology
2.10 Small Animal Laboratory	
Dr. Norasih Trakulchang	Animal physiology
Dr. Somchai Chansawang	Animal nutrition
2.11 Laboratory Maintenance Unit	
Mr. Sirichai Prasertwongse	Electronics
3. Outdoor Laboratory	
3.1 Agricultural Meteorology Station	
Dr. Kasem Chankao	Watershed Conservation and management
Mr. Pongsak Yuhun	Agricultural Climatology
3.2 Lysimeter set-up	
Dr. Visoot Veerasan	Soil physics
Dr. Suradej Jintakanon	Mineral nutrition of plant
4. Greenhouse Assembly	
Dr. Supot Fuangfupong	Physiology of crop production
Mr. Thanakorn Jarupat	Plant pathology
Dr. Kasem Sooksathan	Sugar cane breeding
Mr. Suthep Sirivitayaphakorn	Environmental Engineering
II. Soil and Fertilizer Research Center	
<u>Key persons</u>	<u>Field of specialization</u>
Dr. Sorasith Vocharotayan	Soil Fertility and Chemistry

Dr. Tawin Krutkun	Soil chemistry
Dr. Prachak Charoen	Minerology
Dr. Paiboon Prabuddham	Soil chemistry
Dr. Yongyouth Osotsapar	Plant nutrition
Dr. Somjate Jantawat	Soil conservation
Dr. Somsak Vangnai	Soil microbiology
Dr. Amnat Suwanarit	Soil science

III. Agro-industry Technology Research Center

<u>Key persons</u>	<u>Field of specialization</u>
Dr. Supapong Bhuwapathanapun	Biological Technology
Dr. Lukchon Pukrushpan	Industrial Microbiology
Dr. Prasart Futrakul	Food Engineering

IV. Fresh-water Fisheries Research Center

<u>Key persons</u>	<u>Field of specialization</u>
Mr. Wit Tarnchalanukit	Aquiculture
Dr. Wiang Chuapochuk	Aquiculture
Mr. Pravitt Surancelanart	Aquiculture

V. Agricultural Machinery and Equipment Center

<u>Key persons</u>	<u>Field of specialization</u>
Dr. Apichart Anukularmphai	Soil and Water Conservation Engineering
Mr. Bhanchaw Bhaholyotin	Agricultural Machinery

VI. Extension and Training Service Center

<u>Key persons</u>	<u>Field of specialization</u>
Mr. Poom Khumgliang	Agricultural Extension
Mr. Suchote Daosukho	Agricultural Extension

B. Full-time Staff

I. Central Administrative Office

1. Complex Director
2. Deputy Director
3. Technical Staff
4. Secretary
5. Typist
6. Clerk
7. Librarian
8. Draftman
9. Photographer
10. Messenger
11. Janitor

II. Research Laboratory

1. Scientist
2. Research Associate
3. Analyst and Research assistant
4. Technician
5. Laboratory helper
6. Secretary typist
7. Clerk
8. Janitor

All full-time personnel in the research complex and centers will be staff members of Kasetsart University Research and Development Institute which had been approved in principle by the Government of Thailand.

3. 施設利用計画

KASETSART UNIVERSITY DEVELOPMENT: STRENGTHENING RESEARCH AND EXTENSION SERVICE FACILITIES IN AGRICULTURE

UTILIZATION PLAN FOR VARIOUS COMPONENTS OF THE PROJECT

1. Central Laboratory and Greenhouse Complex

1.1 Central Administrative Office

Activity	Frequency
1) Routine correspondence and clerical service.	All year round
2) Business meeting of Research Committee.	Weekly
3) Compilation of research proposals and preparation of report on approved research projects.	Annually 2 - 3 months
4) Compilation of progress reports of on-going research projects.	Every 6 months
5) Preparation of annual research report.	Once a year
6) Seminar-workshop on research organization and management.	Twice a year for 2 - 3 weeks each
7) Seminar, conference and workshop on subject matters requiring urgent attention.	3 - 4 times a year for 1 - 2 weeks each
8) Control, facilitation and coordination of on-going research undertakings.	All year round
9) Compilation and processing of data.	All year round
10) Graphic-media production service.	All year round
11) Procurement of important technical publications and operation of reading room.	All year round
12) Implementation of institutional research projects.	All year round
13) Evaluation of completed and on-going activities and planning of future activities.	Every 6 months
14) Miscellaneous activities.	Varied

1.2 Soil and Fertilizer Testing and Applied Research Unit

Activity	Frequency
1) Routine analysis of soils, fertilizers and plant materials for at least 100 research projects of University staff members and at least 3,500 farm families annually.	All year round at about 10 samples per day
2) Research in soil fertility management and fertilizer use for at least 5 major crops, namely, sugar cane, rice, vegetables and grapes.	All year round
3) Research in water use of crop, tillage operation and improvement of soil structure for at least 5 major crops mentioned in (2).	All year round
4) Research in soil aspect of the cropping-system approach.	All year round
5) Service in providing facilities and personnel for training of students, agricultural extension workers and farmers in soil fertility assessment and fertilizer recommendation.	All year round

1.3 Postharvest Research Unit

Activity	Frequency
1) Research on nature and extent of quality degradation, and physical, biochemical and physiological changes of perishable agricultural produce, notably fruits and vegetables, during handling and storage.	All year round
2) Research on postharvest pretreatment of perishable agricultural produce for purpose of preventing or minimizing quality degradation.	All year round
3) Research on effects of preharvest and postharvest practices on quality and permissible duration of storage of perishable agricultural produce.	All year round
4) Research on occurrence and control of toxins and other harmful contaminants in agricultural produce during handling and storage.	All year round
5) Research on most economical procedures and optimum conditions of handling and storage of perishable agricultural produce for purpose of minimizing losses and quality degradation.	All year round
6) Service to research projects of University staff members in handling, storage, and biochemical and physiological analyses of perishable agricultural produce.	All year round

1.4 Plant Pest Clinic and Quarantine Unit

Activity	Frequency
1) Service in diagnosing causal organisms of and prescribing control measures for pests and diseases of crop plants for at least 100 research projects of University staff members and over 3,500 farm families in the Kamphaengsaen area and its vicinity.	All year round
2) Service in providing space and facilities for various research projects in plant pests and diseases and their control measures.	All year round
3) Research on nature and occurrence of pests and diseases and their control measures for major crops of the Kamphaengsaen area and its vicinity.	All year round
4) Service in eradication and control of infesting plant pests and diseases of economic importance.	Varied
5) Quarantine service for introduced plant materials to avoid possibility of introduction of plant pests and diseases to the country.	Varied
6) Service in providing facilities and personnel for training students, agricultural extension workers and farmers in diagnostic techniques and control measures for plant pests and diseases.	All year round
7) Compilation of technical data and information and forecasting outbreak of major plant pests and diseases	All year round

1.5 Seed Technology Unit

Activity	Frequency
1) Service in testing, processing, storage and certification of seeds of economic crops for researchers and farmers.	All year round
2) Service in supplying certified seeds of various varieties of economic crops to researchers and farmers.	All year round
3) Service in providing space and facilities for collection of germplasm of crop plants.	All year round
4) Research in various aspects of seed testing, processing, certification and improvement.	All year round
5) Compilation of technical data and information on seeds and other types of germplasm of crop plants.	All year round

1.6 Culture Collection Unit

Activity	Frequency
1) Service in collection, isolation and preparation of microorganisms of importance to agriculture and food-processing industries for researchers and the public.	All year round
2) Research in various aspects of culture collection, isolation, storage, and preparation.	All year round
3) Testing for survival of stored microorganisms and making them readily available all year round.	All year round
4) Research on potentially beneficial microorganisms.	All year round
5) Compilation of technical data and information on culture collection, isolation, storage and preparation.	All year round

1.7 Environmental Science Unit

Activity	Frequency
1) Service in providing space and facilities for graduate research of at least 30 students in the interdisciplinary master's degree program in environmental science and at least 5 research projects of the staff members of the University under the environmental science master research program.	All year round
2) Compilation of technical data and information in environmental science.	All year round
3) Routine laboratory analysis of various physical components of the environment for existing as well as potential toxins and pollutants.	All year round
4) Research on nature, occurrence and control of toxins and pollutants commonly found in the environment.	All year round

1.8 Central-Biochemistry Unit

Activity	Frequency
Service in biochemical, microscopic and physiological analyses of pesticides, fungicides, herbicides, feed, tissues of plants and animals and food materials for various research projects of graduate students and staff members of the University as well as farmers.	All year round

1.9 Radioisotope Unit

Activity	Frequency
1) Service in providing radioactive elements and pertinent facilities for various areas of research such as genetics, plant nutrition, plant metabolism, soil genesis, food preservation and crop water use.	All year round
2) Service in providing facilities and personnel in controlling use of radioactive elements and training of students and staff members of the University in proper utilization of radioisotope techniques in agriculture and other biological sciences.	All year round

1.10 Type Specimen Unit

Activity	Frequency
1) Service in identification, collection, classification, preservation and display of representative samples of plants, animals, and soils in the country together with replicas of their respective natural habitats.	All year round
2) Service in providing type specimens of soils, plants and animals for research in taxonomy and ecology.	All year round
3) Compilation of technical data and information on species, abundance, geographical distribution and natural habitat of soils, plants and animals in the country.	All year round
4) Research on techniques for collection and preservation of type specimens of soils, plants and animals.	All year round
5) Service in providing facilities and personnel for training of students and researchers in techniques for collection and preservation of representative samples of various physical components of the ecosystem.	All year round

1.11 Small Animal Laboratory

Activity	Frequency
1) Service in providing space, facilities and small animals such as rats, mice and rabbits for research in animal genetics, breeding and nutrition of graduate students and staff members of the University.	All year round
2) Service in routine analysis of feeds and feed ingredients for researchers in animal nutrition of the University and livestock farmers.	All year round
3) Compilation of technical data and information on both locally available and imported feeds and feed ingredients.	All year round
4) Service in providing facilities and personnel for training of students, agricultural extension workers and farmers in livestock production and improvement.	Four times a year for 1 - 2 weeks each
5) Research in various aspects of animal genetics, breeding and nutrition.	All year round

1.12 Laboratory Maintenance Unit

Activity	Frequency
1) Service in routine inspection, maintenance and minor repair of utilities, equipment and apparatus of various units of the Central Laboratory and Greenhouse Complex, and in fabrication, testing and installation of simple equipment and apparatus for research and service activities of such units.	All year round
2) Service in fabrication, testing and installation of simple equipment and apparatus for research of graduate students and staff members of the University.	All year round
3) Compilation of technical data and basic information on various items of equipment and apparatus.	All year round
4) Preparation of up-to-date inventory of utilities, equipment and apparatus in the Central Laboratory and Greenhouse Complex.	All year round
5) Preparation and implementation of maintenance and repair schedule for major items of equipment and apparatus in the Central Laboratory and Greenhouse Complex.	All year round

1.13 Agricultural Meteorology Station

Activity	Frequency
1) Recording of speed and direction of wind, temperature and relative humidity of air, temperature and moisture tension of soil, pan evaporation, intensity and duration of solar radiation, intensity and distribution of precipitation, and net radiation and heat flux at the soil surface.	Daily
2) Weather forecasting.	Daily
3) Processing and compilation of up-to-date data and information obtained in (1).	All year round

1.14 Lysimeter Set-up

Activity	Frequency
1) Service in providing space and facilities for research in movement and leaching losses of plant nutrients in soil and crop water use of graduate students and staff members of the University.	All year round
2) Research on leaching of plant nutrients from soil, infiltration of water into and deep percolation of water in soil, and water use of major crops of the Kamphaengsaen area and its vicinity.	All year round
3) Compilation of technical data and information on leaching of plant nutrients from soil, water infiltration and deep percolation in soil, and crop water use.	All year round

1.15 Controlled Condition Unit

Activity	Frequency
1) Service in providing space and facilities for research on environmental factors affecting plant growth of graduate students and staff members of the University.	All year round
2) Research on sensitivity to photoperiod of at least 7 kinds of crop, namely, upland rice, soybean, mung bean, peanut, sugar cane, cassava and oil crops.	All year round
3) Research on responses of at least 11 kinds of crop, namely, upland rice, vegetables, soybean, mung bean, peanut, sugar cane, cassava, forage crops, tobacco, ornamental plants, and oil crops to various sets of environmental conditions.	All year round
4) Research on infestation and control of pests and diseases of crops mentioned in (3) under various sets of environmental conditions.	All year round

	Activity	Frequency
5)	Research on culture of high market-value crops under controlled environmental conditions.	All year round
6)	Research in various aspects of tissue culture of some economic crops.	All year round

1.6 Head House

	Activity	Frequency
	Service in preparation of soil and other growth media of plant and corresponding containers for experiments in the greenhouse and controlled condition units, preparation and mixing of fertilizer, preparation of culture solution, supply of distilled and demineralized water, supply of drying and sterilizing facilities for soil and plant materials in quantity, supply of utensils and apparatus needed in greenhouse and controlled-condition experiments, supply of seedlings of various experimental plants, and cleaning of greenhouse assembly and its surroundings.	All year round

1.7 Greenhouse Proper

	Activity	Frequency
1)	Service in providing space, facilities and care for greenhouse experiments of graduate students and staff members of the University.	All year round
2)	Pot and culture-solution experiments in the agronomic and crop-protection aspects of production of economic crops.	All year round
3)	Pot and culture-solution experiments in varietal improvement of economic crops.	All year round

2. Soil and Fertilizer Research Center

Activity	Frequency
1) Laboratory analysis of representative sample of important soil series of the country to reveal their basic chemical, mineralogical, physical and microbiological compositions and properties.	All year round
2) Laboratory and/or greenhouse experiments for characterization of pedologically and agriculturally important chemical, mineralogical, physical and microbiological processes and phenomena commonly present in soil.	All year round
3) Laboratory and/or greenhouse experiments for characterization of changes of chemical, mineralogical, physical and microbiological compositions, properties, processes and phenomena under various sets of internal and external conditions for each important soil series.	All year round
4) Laboratory experiments and field observation for identification and characterization of soil-forming materials and processes and assessment of their relative significance under various actual as well as potential situations.	All year round
5) Laboratory determination of chemical and physical compositions of fertilizers, limes and soil conditioners, and laboratory and/or greenhouse experiments for assessment of their respective usefulness and suitability and characterization of important reactions and changes that they undergo upon being applied to the soil.	All year round
6) Survey and laboratory, greenhouse and/or field experiments for identification, characterization and assessment of possible substitutes for fertilizer and other soil amendments, and exploration of possibilities of making them economically and readily available.	All year round
7) Survey and laboratory, greenhouse and/or field experiments for identification of environmental pollutants commonly deposited in the soil, characterization of their persistence and changes in and effects on the soil as the natural medium for plant growth, and determination of economical corrective measures for their apparent and potential undesirable effects.	All year round
8) Compilation of basic technical data and information on soils, fertilizers and environmental pollutants of the country.	All year round

Activity	Frequency
9) Consultation service in soil science, fertilizer technology and proper utilization and reclamation of deteriorated and problem soils of the country.	All year round
10) Seminar, workshop and/or conference in theoretical advancement in soil science, fertilizer technology, and environmental pollution.	Twice a year for 1 - 2 weeks each

3. Agro-industry Technology Research Center

Activity	Frequency
1) Intensive technical investigation in the production and processing of fiber, textile, natural dyes, essential oils, drugs, beverages and other chemical, agro-industrial products.	All year round
2) Testing and evaluation of imported and exported agro-industrial products.	All year round
3) Survey and laboratory experiments for identification, characterization and assessment of unconventional sources of fiber, textile, natural dyes, essential oils, drugs, beverages and other chemical, agro-industrial products, and exploration of possibilities of utilizing them economically.	All year round
4) Compilation of technical data and information on the various agro-industrial products, both conventional and unconventional, in the country.	All year round
5) Consultation service in handling, processing and manipulation of agro-industrial products.	All year round
6) Service in providing facilities and personnel for training of students, agricultural extension workers, farmers, and employees of private enterprises in agricultural product processing in handling, processing and manipulation of agro-industrial products.	All year round
7) Seminar, workshop and/or conference in various aspects of agro-industry technology.	All year round

4. Fresh-water Fisheries Research Center

Activity	Frequency
1) Intensive research in various aspects of culturing presently and potentially important fresh-water animals, such as fish, frog and turtle.	All year round
2) Intensive research in economical and effective breeding and improvement of various species of fresh-water animals of economic importance.	All year round
3) Intensive research in proper utilization and conservation of fresh-water fisheries resources.	All year round
4) Intensive technical investigation in inland-water pollution, its effects on important fresh-water animals and mankind, and its control measures.	All year round
5) Survey on type, natural habitat, quantity and distribution of fresh-water animals and type and extent of fishing in all parts of the country.	All year round
6) Compilation of up-to-date technical data and information on fresh-water animals, and fishery resources, practices and products of the country.	All year round
7) Service in providing facilities and personnel for training of students, agricultural extension workers and fishermen in aquiculture and fishery practices.	All year round
8) Consultation service in aquiculture and fishery practices.	All year round
9) Service in keeping a dependable source of supply of fingerlings, tadpoles and larvae of other fresh-water animals readily available to fishermen and other interested parties.	All year round
10) Seminar, workshop and/or conference on fresh-water fisheries technology and resources.	Twice a year for 1 - 2 weeks each

5. Agricultural Machinery and Equipment Center

Activity	Frequency
1) Intensive technical investigation on manufacture, operation, performance and care of important farm machinery and equipment.	All year round
2) Service in testing and evaluation of imported and locally manufactured farm machinery and equipment.	All year round
3) Consultation service in selection, procurement, manufacture, operation, performance and care of farm machinery and equipment.	All year round
4) Service in providing facilities and personnel for training of students, agricultural extension workers and farmers in manufacture, operation, performance and care of important farm machinery and equipment.	All year round
5) Service in providing heavy machinery and equipment and pertinent well-trained technicians needed in field experiments, performing proper maintenance and minor repair for such machinery and equipment, and fabricating simple farm implement and appliance.	All year round
6) Compilation of technical data and information on various types of farm machinery and equipment.	All year round
7) Seminar, workshop and/or conference on manufacture, operation, performance, testing, evaluation and care of various types of farm machinery and equipment.	Twice a year for 1 - 2 weeks each

6. Extension and Training Center

Activity	Frequency
1) Farm visit.	Monthly
2) Press release on modern agriculture and related biological sciences.	Monthly
3) Radio program on various aspects of crop and live-stock production, home economics, fisheries, forestry, agricultural economics, marketing and cooperatives.	Daily (5:00 - 23:00)
4) Weather forecast for agriculture, fisheries and forestry via radio.	Daily
5) Television program on important activities and development in agriculture and related biological sciences.	Weekly (土曜 9:00 - 9:30)

Activity	Frequency
6) Publication and circulation of farm journals, farm handbooks, extension bulletins, agricultural production source book, Kasetsart University newsletter, Kasetsart University students' handbook, Kasetsart Journal, University Catalog, etc.	Varied
7) Production of charts, photographs, slides, recorded tapes, motion picture and other types of audio-visual media for use in agricultural extension, short-term training, seminar, conference and teaching.	All year round
8) Establishment of appropriate demonstration plots at various locations in the Kamphaengsaen area and its vicinity.	Varied
9) Service in providing audio-visual facilities during commencement exercises and other important ceremonies of the University.	Annually
10) Service in providing facilities for annual orientation of new staff members of the University.	Annually
11) Service in entertaining visitors on the campus and mailed questions, and providing appropriate answers to the questions asked.	Varied
12) Service in administering on-campus, vocational course offering for the public.	Twice a year for 1 month each
13) Service in sponsoring short-term training program for agricultural extension workers and farmers.	Varied
14) Service in sponsoring special training for staff members of the University.	Varied
15) Service in keeping up-to-date photographic record of and providing facilities and personnel for important events on the campus.	Varied
16) Research and evaluation on techniques and procedures in agricultural extension and training service.	All year round
17) Business meeting of Extension and Training Governing Board and various pertinent standing and ad hoc committees.	Varied
18) Seminar, workshop and/or conference on strategy, techniques and procedures in agricultural extension and short-term training as well as various other aspects thereof.	Twice a year for 1 - 2 weeks each
19) Evaluation of completed and on-going activities and planning of future activities.	Twice a year
20) Miscellaneous activities.	All year round

V. タイ高等教育の将来

Remarks on the Future Projections of Higher Education in Thailand

The past performance of most universities in Thailand has been subjected to many criticisms by the public. The major parts of these criticisms are concerned with the following aspects:-

- (1) That those who graduated from the university are not well qualified to fill many jobs which are needed by the country for the development of the economy and society.
- (2) That the contribution on the scientific and technical knowledges made by Universities is non-significant as compared to a large budget which was allocated by the country for higher education year by year.
- (3) That higher education serves only small group of people and create an isolate and untouchable community which bring with it more problems than problems solved.

Such criticisms are well recognized and brought into consideration by many groups of key organizations including those people who dealt with the Educational Reform Plan and the Fourth Plan of Higher Educational Development. However, it is difficult to be assured that both plans could be very well connected and accomplished when some loopholes still existed at the present time, the important among which are:-

- (1) Lack of interrelationship between components developed by different organizations and formulated into the Fourth National Social and Economic Development Plan.

Higher educational development and planning in the past has been based to a large degree upon academic requirements determined by the judgements of professional faculty members concerning the needs of individuals and society. In the modern world of complex technologies and societies, the successful operation of the country economy depends upon a high order of knowledge, a suitable number of practitioners in each field, and the harmonious interplay of many skills in required areas. It is essential then to recognize that manpower development particularly by universities is a complex activity requiring the

attention of many segments of private society and government. Such attention has not been sufficiently given and incorporated into the present plans.

- (2) As a result of (1), no definite objectives and aim could be laid within the framework of a university in the development of manpower due to the lack of reliable data on the social and economic needs.

There are however certain existing facts which are generally used as bases for the Higher Education Development Plan. They are as follows:-

- (1) Social demand for higher education which is increasing year by year. If one considers those who have the capacity and the desire but could not benefit from higher education of any kind form a waste of human resources, then the University need to accept them with maximum capacity regardless of the economic needs.
- (2) National and public needs for the university participation in correcting social and economic problems and directly helping in the development of the country.

This move is more apparent within the last five years which resulted in a number of programs developed under the cooperative efforts between universities and other government and non-government organizations. (Such as Baby Food Program, the Highland Project, etc.)

It is quite true that Universities in Thailand in the past had performed the only task of increasing higher educated manpower to serve the nation needs. Now and in the future, they have to move not only toward the direction of the service directly or indirectly to help individuals reach fulfillment of their talents, interests and ideals but also to take an active role in advancing scientific and technological knowledges to strengthen the nation economy and social welfare and to help the country keep its stability and a position of leadership in the region. Universities in the next step of their movement in the Fourth Plan should be orientated toward the following tasks which, in the past has been given less attention.

1. That more opportunity for higher education study should be accessible at all levels to students throughout the Kingdom (i.e. many programs such as vocational, continuing and non-formal educations must be devised to aid talented but unfortunate or disadvantage persons.)

2. That university participation through research and work in the programs which are vital to the nation social welfare and economy (such as Land Reform Program, Forestry Community Program, etc.) should be encouraged. This will enable universities to:-

- 2.1 Provide their enormous resources in the term of brain power and trained manpower to assist the jobs .
- 2.2 Gain experience in solving the actual field problems, and utilize this experience to enrich the educational programs .

By enlarging the role, many difficulties will be faced which will be of different nature from university to university. Of all the problems, the matter of finance will be the most critical. One of the ten points policy set forth by the National Education Council is quite clear that financial support from the Government for higher education will become less and the amount reduced will be used to expand the lower education which will serve the major group of public in high schools rather than the elite group in universities. Also the 3% of the total budget set for university research grant is too small to contribute toward the second part of the above mentioned role.

With emphases on the above roles, Universities must earnestly seek for all kinds of assistance to be provided by internal and external agencies, both private and government. For economy and efficiency of higher educational operations, the full use of all available resources, private and public, should be mandatory. Cooperation among colleges, universities, and other organizations will help conserve scarce resources as well as improve the effectiveness of their programs of instruction, research, and community service. Such cooperation should be encouraged and strengthened. Cooperation between colleges and universities should not be limited only on the manpower and educational exchange programs but also on the instrument and library resources. Leadership in each specific area in each university should be identified in order to give the right direction of support and sharing among cooperative members, and at the same time to avoid the duplication.

Another serious problem which many universities are facing is the improvement of the quality of faculty members. A large number of staff in universities today has been kept on with teaching for too long and could hardly orientate themselves toward other jobs such as research and educational services.

Improvement of faculty member quality therefore involved not only on the in-service education through additional study and research grants, but also on the support of training for research and educational service leaderships.

We at Kasetsart University realize a greater challenge dealing with national social and economic problems which will be faced in the near future. It is now a turning point by which a great demand for the role of universities will come from the public. Whatever that will be, we need to take it up and face it with our best effort.

VI. タイ農業教育の機構

ORGANIZATION OF AGRICULTURAL EDUCATION IN THAILAND

Education Organization

Institutions of higher learning in Thailand are under the control of the State University Bureau. They have been established for different purposes and perform different functions. Some institutions have been assigned to limit their works to a single field or a small number of tasks while others have a wider range. Education at the school and college levels is under the control of the Ministry of Education. Vocational schools and colleges have been established for specific purposes and perform specific tasks.

Universities Engaged in Agriculture

There are three universities, out of the total number of eleven in the Kingdom, which offer degrees in agriculture. Kasetsart University, as the name in Thai implies, has carried out its function of being the National College of Agriculture for over thirty years. Today it continues to be the only university in Thailand that offers graduate courses in agriculture, forestry, fisheries, and related sciences. The Faculty of Agriculture of this university is the major source of teachers and guidance in the establishment and development of new agricultural colleges and schools throughout the Kingdom. A total number of 9,350 graduates have been employed in key positions in various organizations and played important roles in agricultural development throughout the country. The faculty has 195 staff members and a total enrollment of 1,600; 350 students were graduated in 1973. With the expansion of the university into a new site with more land area, with an increasing number of staff members, and with student enrollment expected to more than double, Kasetsart University will continue to play an important role in institution building for agriculture in Thailand.

Established in 1964 as the first regional institution of higher learning in Thailand, Chiangmai University has at present 72 faculty and staff members in the Faculty of Agriculture. The present enrollment of students in this field is 375; 71 students graduated in 1973. Another regional institution of higher learning which has been engaged in agricultural instructional and research is Khon Kaen. This university is even younger than Chiangmai, for it was founded in 1966. At present there are 76 faculty and staff members in the Faculty of

Agriculture. Out of the total enrollment of 480 students in this faculty, 75 students were graduated in 1973.

Degree Programs in Agriculture at the University Level

The development of agricultural programs in Kasetsart University is best understood by looking through the past history of the university. The predecessor to the Faculty of Agriculture was established in 1904 as a School of Sericulture, responsible to the Ministry of Agriculture which put emphasis on this work at that time. The school was succeeded by the School of Agriculture, and the School of the Ministry of Agriculture, chronologically. In 1928, the College of Agriculture, with the status of a junior college, was set up in place of the former "school" and administered by the Department of Agriculture. It offered three-year training programs in agricultural science for high school graduates. After being amalgamated into Kasetsart University as the Faculty of Agriculture in 1943, its curriculum was expanded to five-year programs leading to the degree of Bachelor of Science in Agriculture.

The curriculum presently in effect at Kasetsart University may be said to have evolved from many sources. First it is initiated through the requirements of the Departments of Agriculture, Forestry, Fisheries, Co-operatives, Livestock, and Irrigation. In addition, parts of the curricula of colleges and universities in the Philippines, the United States, Australia, and Europe have been integrated where the university feels they provide students with more scope and background.

The main body responsible for the curriculum is the University Education Committee, consisting of ten members of the teaching staff who are appointed by the rector of the university. This committee recommends a broad guideline for all curricula. Each faculty, by soliciting ideas from staff members through department heads, and after deliberating within the faculty committee, proposes a new or rearranged curriculum or suggests an improvement to the education committee. The proposal is subject to review, or revision if necessary, before a recommendation is made to the University Council. A new curriculum or a proposal to change a core curriculum must get approval from the National Education Council.

In the graduate school, the faculty offers graduate courses leading to the Master of Science degree in various specialized fields of agriculture. Ph.D.

programs are under preparation by a number of departments which are expected to be completed and offered by all departments within the faculty in a few years.

While several faculty and staff members of Chiangmai and Khon Kaen Universities possess graduate degrees from abroad, the great majority are graduates of Kasetsart University. Although both universities emphasize the development of agricultural sciences and technology to serve the needs of regional societies, the instructional and research programs in agronomy as well as related fields in agriculture are based primarily on the system used by Kasetsart University. Only baccalaureate programs are offered in agriculture at both universities.

A credit system has been adopted and utilized by the three universities in formulating degree programs. Minimum credit requirements have been set and vary from 140 to 150 credits for a four-year program leading to the baccalaureate degree and thirty to thirty-six credits for the master's degree. Cross registration for courses can be made between the three universities to a limited extent, but the practice is not common. There has been an exchange of staff members in the teaching of some specific courses, and short and long term visiting professors are being arranged in order to make the instructional programs more effective at each university.

Non-Degree Programs in Agriculture at the University Level

Only Kasetsart University offers a non-degree program in agriculture and its related fields. The program is aimed at developing simple vocational courses in agriculture for the general public, in which each individual can attend class without the requirement of a high educational background. A certificate is given upon the completion of each course. No regular program of professional study in agriculture which requires one or two years of training has been offered by the universities. Short training programs, carried out jointly by staff members of the universities and other government organizations, are common; however, they are usually limited to the training of government officials, government employees, and rural leaders of the farmer or grower groups.

Agricultural Colleges and Schools

Under the organization of the Department of Vocational Education in the Ministry of Education, seven agricultural colleges and twenty-three agricultural schools have been established throughout the country. There is a total number

340 staff members at the seven agricultural colleges; student enrollment totaled 2,948 in 1973. There are, at present, 470 agricultural teachers, handling 5,370 students, in all agricultural schools.

Collegiate Programs in Agriculture

Students who finish high school or elementary school in agriculture can take collegiate programs in agriculture for their further study. The resident requirement for each student in these programs is two academic years. Minimum requirement for graduation is 90 credit hours. Of the total credit hours, 27 must be in general and related courses, 40 in technical agriculture, and 23 in electives. For students who wish to major in Teaching in Agriculture, 17 credits in agricultural education of the total 23 credits in electives are required. Upon their graduation, students receive the Secondary Teaching Certificate in Agriculture. Graduates of these colleges find it very difficult to transfer to universities to continue their education because of the difference in course standards and the lack of coordination between institutions at the two levels.

Programs in Elementary School in Agriculture

Elementary schools in agriculture accept students who finish elementary high schools and wish to take agriculture for their vocational study. The programs take three years in which to complete the minimum requirements of 140 credit hours, among which 72 credit hours are assigned to agriculture and its related fields.

VII. 教育体系及び政策

Educational System and Policy

The system of education comprises a seven-year elementary and a five-year secondary program. Higher education consists of two-year diploma level colleges and four-year degree level universities, including graduate programs in various fields. The National Economic Development Board, the government planning agency, assesses the manpower requirements which serve as guidelines for educational development. Its Executive Committee approves the education plan along with the Executive Committee of the National Education Council. These two bodies and the Ministries of Education and the Bureau of State Universities establish joint planning procedures in preparing education policy. The policy presently adopted has two emphases:

(1) to expand enrollment to meet the educational needs of the rapidly increasing school-age population, and (2) to improve the quality of education in order to produce the qualified manpower for the developing economy.

Agricultural Education

Agriculture is part of the curriculum of some lower secondary schools (grades 8-10). There are a number of vocational agricultural schools offering a three year certificate course (grade 11-13) and of these a small number provide a two-year diploma course (grade 14-15) to certificate holders. In addition, there is an agricultural teacher training college at diploma level and at least two agricultural schools offering a three-year course for young farmers.

Three universities (Kasetsart, Khonkaen, and Chiang Mai) have agriculture and related faculties. For many years it is anticipated that Kasetsart University, the first and foremost of the three, will continue to be the country's main source of graduates trained in all fields of agriculture, providing some seventy percent of these graduates.

To fulfill its training and research functions properly and to support the intended government programs for the modernization of agriculture, Kasetsart University is implementing a development plan, formulated with assistance from the Rockefeller Foundation. It is anticipated that enrollment will increase from 3,800 in 1970 to 11,400 in 1981 with a graduating class including graduate education to reach 3,200 in 1981. The class of graduates would consist of more

than 800 at the master's level and forty at the doctorate level. The number of instructors at all levels would increase and teaching and research facilities and equipment would be markedly improved. Recognizing that the Bangkhen campus, locked in by the growth of the city, was inadequate to meet the challenges either of a rapidly rising student enrollment or quality educational improvement, the addition of a second campus became mandatory. The search for this, to be located in a rural environment where the increasingly needed practical experiences would be available to the young student agriculturalists, culminated in the acquisition of some 7,800 rais at Kamphaengsaen eighty kilometers west-northwest of Bangkok.

Although the broad national educational policy is the responsibility of the ministries and boards referred to above, curriculum development in carrying out national policy is the responsibility of individual universities. In Kasetsart University initial responsibility for curriculum development rests with the Committee on Education reporting to the Vice Rector for Academic Affairs. This committee recognizes the need for a continuing review by deans and department heads of all faculties of course offerings. This committee also has emphasized the need for developing interdisciplinary programs among faculties and has encouraged faculties to do this.

Dr. Sutharm Areekul, Vice Rector for Academic Affairs, in a paper on Educational Programs of KU for Development of Small Farmers has said that beginning with the academic year 1977, "Kasetsart University has its plan of changing curriculum content in agriculture including teaching and learning styles so that it could produce graduates with much more practical knowledge and skills. It is expected that the program will have a great impact on the building up of a well-trained manpower to serve small farmers for the country in the near future." In keeping with this philosophy the Committee on Education is encouraging curricular changes suggesting five cogent reasons for introducing the change at this time: 1) the rigidity of the present curriculum is not in keeping with present educational trends, 2) an increasing number of free elective hours must be provided the student, 3) number of credit hours required for a bachelor's degree are too high and should be reduced, 4) students must be encouraged to devote more time to independent self-study, and 5) practical aspects of all agriculturally related subjects must be emphasized and their presentation improved.

VIII. 世銀援助

Kasetsart University - International Bank for Reconstruction and Development Project (IBRD)

On May 24, 1972 the Royal Thai Government and the World Bank signed Loan and Project Agreements, a first step in implementing a project of the university to include physical development at both campuses (Bangkhen and Kamphaengsaen) and the upgrading of both staff and curriculums through a program of fellowships and technical assistance. A selected and dedicated group from the university already involved in the negotiations with the "World Bank" became the nucleus of the KU-IBRD Project Implementation Unit. This unit, located near the Rector's Office and answerable to him as the Project Director, is responsible for the day today, month to month execution of the project. A Project Coordinator, heading the unit and reporting to the Rector has direct overall supervision.

Under supervision of the Project Coordinator, the Project Unit is charged with four major responsibilities: 1) development of the physical plant; 2) procurement of equipment (educational, scientific, and industrial); 3) fellowship awards to strengthen the teaching staff; and 4) recruitment of technical specialists for curriculum and university management development.

As an essential, initial step in fulfilling the objectives and goals set for the university in its development plan, the well-know campus planning consultants Delmonte-Chan/Rader of San Francisco, California were employed to produce a Master Plan for the Bangkhen and Kamphaengsaen campuses. The Master Plan has been developed to serve as a general guide for the physical development and growth of the university and to accommodate the incremental growth of facilities required to meet planned enrollment increases and allow for appropriate research, service, and community activities. The Master Plan is predicated upon the development at Kamphaengsaen of faculties of Veterinary Medicine and Agriculture along with related fields and activities of other faculties which would best serve the students. Enrollment at Bangkhen over the next 15-20 years is expected to reach 8,000 students and at Kamphaengsaen to reach 12,000 to 15,000, both of the campuses having graduate students at the master and doctorate levels. With the execution of the World Bank loan the Thai Government has committed itself to support the university's development project through

a first phase which will provide facilities for an initial 1,500 students at Kamphaengsaen and expand facilities at Bangkok to accommodate 8,000 students.

After acceptance of the Master Plan, the Civil Works Group, under counsel of a Project Architect and subject to review by the Thai Government as well as the World Bank prepared a contract signed by the university with Thai Engineering Consultants Company for site development. This work was started early in 1976. Again with approval of the Thai Government and the World Bank, seven, prestigious, local architects were selected for the new building requirements of the two campuses.

Meanwhile master lists for equipment and furniture have been prepared and procurement begun. Specifications were worked out in detail and the complicated and exacting procedure of opening the procurement to international, competitive bidding was completed. The first two phases for equipment contracting amounting to 59.4 million baht have been completed. A third phase bidding is now underway for some thirty-eight million baht and a fourth is anticipated for the next fiscal year. Master lists for furniture have been prepared and first bids will soon be taken. It is anticipated that almost all furniture will be locally manufactured.

The fellowship program was designed to raise the academic and research talents and skills of the teaching staff at Kasetsart. Awards have been made for seventy new Ph.D. and 40 M.S. or M.A. degrees. Fifty four of these have already returned to the campus with their new degrees. Some who received fellowships under the loan for masters degrees have requested permission to continue to study, through private funding, for the doctorate. This extension of time has been granted. It is anticipated that all of these students will return to the campus within the next twelve months.

Another important aspect of the project has been the use of foreign technical specialists to aid in the curriculum development and university management areas. The total number of these individuals is twenty-five serving three to twelve months in such varied areas as anthropology, aquaculture, agronomy, home economics education, food science, and veterinary science. To strengthen the university's management capabilities specialists have been recruited in library science, communications media, and registration and student records.

Seventeen specialists have completed their assignments and four, one each in agricultural engineering, agricultural economics, veterinary parasitology, and teacher education will arrive very shortly.

Although the original estimated total cost was 589.3 million baht, with increased costs of construction and equipment it is now estimated that the overall cost will exceed this appraisal estimate by more than thirty percent.

If the role of Kasetsart University in the progressive development of Thai agriculture, and the very important contribution agricultural education can make to this, is to be realized as presently visualized both by the university and by the government, continuing support must be forthcoming from the Thai Government, from other governments, and from agencies i. e., the World Bank and others.

IX. カセサート大学法抜粋

A Translation of Sections 7 and 8 of Kasetsart University Act., 1968

Section 7. The University is an institution for education and research with the purpose of implementing high-level educational curricula in various technological and professional fields, conducting pertinent research, promoting high-level technology and professions, and preserving national culture.

Section 8. The University may organize the following operational units:

- (1) Office of the Rector,
- (2) Various Faculties,
- (3) Graduate School,

and in addition, may create Institutes for research and Offices for promotion and extension of technology.

The Office of the Rector may be subdivided into Divisions and Departments.

Each Faculty and the Graduate School may be subdivided into academic Departments and Office of the Secretary.

Each Office of the Secretary may be subdivided into Sections.

X. 高等教育 9 主要事項

Nine-point Policy of Educational Development

Higher Education Level

(Fourth National Education Development Plan)

- 1) To upgrade quality of educational management with emphasis on educational standard and quality of academic staff.
- 2) To improve educational curricula, subject-matter content and learning process to include both theory and practice concurrently, and, at the same time, improve the selective procedure for admitting students into institutions of higher learning for purpose of producing graduates of high capability for more efficient service to the society.
- 3) To improve and promote production of graduates in the fields of great demand in terms of job opportunity and urgent needs in national development.
- 4) To formulate basis for the establishment of regional community colleges in accordance with the prevailing economic and social conditions.
- 5) To encourage institutions of higher learning to expand activities in instruction, research, production of text books and other educational materials, technical services to the public and preservation of national art and culture.
- 6) To promote expansion of implementation of open system of higher education in various universities by emphasizing more extensive use of communication media in the teaching-learning process to enable the student to learn by themselves more effectively.
- 7) To encourage private institutions of higher learning to expand the educational programs for which they are fully prepared so that they will be able to take part fully in shouldering the responsibility in the subject-matter areas that they have the necessary skill and competence; exceptions to this are the areas of teacher training and education for which the government will be solely responsible.
- 8) To allow state institutions of higher learning to make appropriate adjustments on the amount of matriculation fees collected from the students in accordance with the prevailing realistic situation, and to exploit other sources of income to support themselves within the scope of their respective responsibilities so as to reduce financial burden of the government.

- 9) To promote cooperation and mutual assistance among the various institutions of higher learning for purpose of making possible full-scale implementation of activities that are appropriate to their respective characteristic setting and improving quality and efficiency of higher education.

XI. カセサート大学概要

KASETSART UNIVERSITY

I. GENERAL INFORMATION

Official Name of Institution :

: Kasetsart University

Date of Foundation : as College of Agriculture, 1928, founded as university by Kasetsart University Act B.E. 2486 in 1943

Full Postal Address : Kasetsart University, 50 Paholyothin Road, Bangkhen, Bangkok 9, Thailand

Address for Telegrams and Cables : None Telephone : 5790113

Executive Head

Name : Professor Rapee SAGARIK Official Title : Rector

Appointed 1975, hold office until 1977

Senior Administrative Officer

Name : Professor Dr. Phaitoon Ingkasuwan

Vice-Rector for Business Affairs

: Professor Dr. Sutharm Areekul

Vice-Rector for Academic Affairs

: Mr. Arb Nakajud

Vice-Rector for Development

: Dr. Bhinyo Kalayanamitr

Vice-Rector for Student Affairs

: Dr. Watna Stienswat

Vice-Rector (Kamphaengsaen Campus)

II. ACADEMIC STRUCTURE OF THE INSTITUTION

i) Principal Academic Division

(a) Graduate School

No. of Staff

Full-time Part-time

328

85

Professor Bunjird Khatikarn, Ph.D. Dean

(appointed from academic staff members of various departments)

1. Agricultural Economics

2. Agricultural Education

3. Agricultural Extension

4. Agronomy

5. Animal Breeding

6. Animal Nutrition
7. Animal Production
8. Biology
9. Botany
10. Economics
11. Electrical Engineering
12. Entomology
13. Fisheries Science
14. Food Science and Technology
15. Genetics
16. Horticulture
17. Irrigation Engineering
18. Microbiology
19. Plant Breeding
20. Plant Pathology
21. Pomology
22. Silviculture
23. Social Development
24. Soil Science
25. Teaching English
26. Teaching Mathematics
27. Teaching Science
28. Teaching Social Science
29. Teaching Thai
30. Zoology

(b) Faculty of Veterinary Science 54 12

Professor Chakr Pichaironarongsongkram, D.V.M. Dean

1. Anatomy
2. Medicine
3. Pathology
4. Pharmacology
5. Physiology
6. Surgery

(c)	Faculty of Agriculture	221	24
	Asst. Prof. Banjerd Boonsue, Ph.D. Dean		
	1. Agronomy		
	2. Animal Science		
	3. Entomology		
	4. Farm Mechanics		
	5. Food Science and Technology		
	6. Home Economics		
	7. Horticulture		
	8. Plant Pathology		
	9. Soils		
(d)	Faculty of Economics and Business Administration	105	15
	Asst. Prof. Sopin Tongpan, Ph.D. Dean		
	1. Accounting		
	2. Agricultural Economics		
	3. Business Administration		
	4. Cooperative Science		
	5. Economics		
	6. Marketing		
(e)	Faculty of Education	222	22
	Boontham Chit-anan, Ph.D. Dean		
	1. Education		
	2. Physical Education		
	3. Vocational Education		
(f)	Faculty of Engineering	73	28
	Jit Pitchakul, B.Eng., Cert in Dam Eng. Dean		
	1. Agricultural Engineering		
	2. Civil Engineering		
	3. Electrical Engineering		
	4. Hydraulics and Hydrology		
	5. Irrigation Engineering		
	6. Mechanical Engineering		
(g)	Faculty of Fisheries	36	7
	Assoc. Prof. Mek Boonbrahm, M.S. (Fisheries) Dean		

	1. Aquaculture		
	2. Fisheries		
	3. Fishery Biology		
	4. Fishery Products		
	5. Marine Science		
(h)	Faculty of Forestry	60	4
	Chongrak Prichananda, Ph.D.	Dean	
	1. Conservation		
	2. Forest Biology		
	3. Forest Engineering		
	4. Forest Management		
	5. Forest Products		
	6. Silviculture		
(i)	Faculty of Science and Arts	223	19
	Professor Davi Yanasughonda, Ph.D.	Dean	
	1. Biology		
	2. Chemistry		
	3. Languages		
	4. Mathematics		
	5. Physics		
	6. Statistics		
(j)	Faculty of Social Sciences	48	11
	Assoc. Prof. Niphon Kantasewi, Ph.D.	Dean	
	1. Geography and History		
	2. Political Science and Public Administration		
	3. Philosophy and Religions		
	4. Psychology		
	5. Sociology and Anthropology		
ii)	Special Departments for Adult and Lifelong Education		
(a)	Office of Extension and Training	18	10
	Porn Resanonda, M.S.	Director	
	mission : 1. To undertake extension and training programs in various agricultural, vocational, and other fields and subjects for the government officials and the		

general public, especially those in rural areas, in cooperation with other Faculties and Institutes.

2. To serve as the public relation unit of the university
3. To serve as the audio-visual aids center of the university.

iii) Constituent Colleges and Institutes

(a) Institute of Food Research and Product Development 65 -

Professor Amara Bhumiratana Director

- mission :
1. To undertake research on food science and technology
 2. To develop food products of better quality and more nutritional value.
 3. To improve the quality of crude commodities in demand of the food industry.
 4. To disseminate findings on food science and technology and to introduce new food products to the food industry and interested people.

(b) National Corn and Sorghum Research Center 14 6

Witawat Buachan Director

1. To unify research activities in corn and sorghum as a national research effort, jointly with the Ministry of Agriculture and Cooperatives.
2. To provide facilities for training Kasetsart students in crop production.
3. To provide facilities for in-service training for agricultural research and extension personnel of Thailand and other Asian countries.

iv) Other Associated Institution

(a) Phramongkutkloa College of Medicine 36 61

Major General Sa-ard Prasertsom Director

Preclinical Medicine:

1. Anatomy
2. Human Physiology
3. Pathology and Forensic Medicine
4. Biochemistry

5. Parasitology
 6. Histology
 7. Pharmacology
- Clinical Medicine:
1. Medicine
 2. General Surgery
 3. Orthopaedics
 4. Paediatrics
 5. Obstetrics and Gynaecology
 6. Radiology
 7. Ophthalmology
 8. Laryngology
 9. Neurology and Psychiatry
 10. Physiotherapy
 11. Military and Community Medicine

III. OTHER INFORMATION

i) Descriptive note

Prior to 1943 Kasetsart's status was that of a 3-year college of agriculture. It became a university by the Kasetsart University Act B.E. 2486 in 1943, amalgamating the previously established schools of Agriculture and Forestry and creating two new faculties, namely the Faculty of Cooperative Science and the Faculty of Fisheries. Subsequent legislation in 1955 brought about the transfer of two additional faculties: the Faculty of Veterinary Science from the University of Medical Sciences and the Faculty of Irrigation Engineering from the Department of Irrigation. In 1966, the University set up the Faculty of Science and Arts, and the Graduate School which, as a coordinating unit for the graduate programs of all faculties, has the status of a faculty. The Faculties of Education and Social Sciences were established in 1969 and 1974 respectively. Thus, there are presently ten faculties: Agriculture, Economics and Business Administration, Engineering, Education, Fisheries, Forestry, Science and Arts, Social Science, Veterinary Science and the Graduate School. Considering its development since

the inception, Kasetsart University is closest to the "Land Grant" model of a university.

The University Council is the governing body empowered to formulate academic policies and to issue rules and regulations on University administrative matters. With a membership of twenty-nine, including its chairman, the University Council comprises two categories of members: ex officio and appointed. The ex officio members are the Secretary-General of the National Education Committee, the Rector, five Vice-Rectors, twelve Deans and Directors. The chairman and a number of members (at least 4 but not more than 9) are appointed by the Crown on grounds of merit and upon the recommendation of the Cabinet. The Vice-Rector for Business Affairs is the Secretary-General of the University Council. The term of office for the appointed Council members is two years.

Kasetsart University is an institution attached by law to the Bureau of State Universities, Office of the Prime Minister.

As one of the country's 11 state-owned university, Kasetsart obtains practically all of its financial support from the State budget. Academic, budgetary, and personnel matters of the University are under the supervision of the Bureau of State Universities. Contributions from various sources, public and private, to support research activities are additional income of the University.

On-campus housing accommodations are available to about 10 percent of academic staff and dormitories accommodate about 50 percent of the student population.

ii) International Inter-University Co-operation

The University has joint research undertakings with other international institutions, namely

1. SEARCA (Southeast Asian Regional Center for Graduate Study and Research in Agriculture, Philippines)
in the field of agriculture;
2. BIOTROP (Seameo Regional Center of Tropical Biology, Indonesia)
in the field of biology;
3. RIHED (Regional Institute of Higher Education and Development, Singapore)
in the fields of education and economics.

Research arrangements for graduate student theses have been made with other universities, namely:

1. Stanford University (U.S.A.)
2. University of Minnesota (U.S.A.)

Membership

1. AAACU (Asian Association of Agricultural Colleges and Universities)
2. ASAIHL (Association of Southeast Asian Institutions of Higher of Higher Learning)

iii) Academic Year

First Semester	June to October
Second Semester	November to March
Summer Session	May to June

iv) Admission Requirements

Admission to the University for new undergraduates is by the entrance examination, administered in Thai by the Bureau of State Universities. All applicants must be of Thai nationality and secondary school graduates (equivalent to grade 12).

High school graduate equivalent may apply under government to government contract, or students from ASEAN countries under the government student exchange contract.

Admission of an applicant to the Graduate School is recommended by the Subcommittee on Admissions appointed by the Graduate School. The same procedure applies to foreign applications.

v) Fees

Undergraduate level:

Registration (new student only)	100 Baht
Breakage deposit (returnable)	50
Tuition fees (per credit-hour)	5
Incidental fees	350
KU Student Body Organization (per year)	100
Dormitory (per 2 semesters)	500
Dormitory (Summer session)	200
Transcript of record (per copy)	5
Late registration fine (per day)	10

Faculty transfer application	50
Student I.D. card	5
Late examination fine (per course)	20
Diploma	50
Graduate level:	
Registration (new student only)	100 Baht
Breakage deposit (returnable)	100
Tuition fees (per credit-hour)	50
Dormitory (per 2 semesters)	1,000
Test of English proficiency	30
Diploma	100

vi) Languages of Instruction

Thai is used in undergraduate level.

English is used in certain upperdivision and graduate courses.

vii) Principal Degrees and Diplomas

Bachelor of Science	- B.S. (4 years)
Bachelor of Arts	- B.A. (4 years)
Doctor of Veterinary Medicine	- D.V.M. (6 years)
Master of Science	- M.S. (2 years)
Master of Arts	- M.A. (2 years)
Master of Arts in Teaching	- M.A.T. (2 years)

viii) Libraries

Kasetsart Central Library	
Books (volumes)	68,772 <u>Number</u> (English and Thai, with bound periodicals included)
Serial publications (volumes)	493 (Thai)
	262 (English)
Maps	106
Microfilms (rolls)	14

The faculty libraries are located in the Faculties of Economics and Business Administration, Education, Engineering, Fisheries, Forestry and Social Science, serving their respective fields. These in time will concentrate on providing reading facilities, while major reference sources will be located in the Central Library. The system

of cross reference between Kasetsart Central Library and faculty libraries is being prepared.

ix) Museums

None

x) Principal Periodical Publications

Kasetsart Journal (semianually)

Kasetsart News (monthly)

KU Newsletter (bimonthly)

IV. STAFF AND STUDENT NUMBERS

i) Academic Staff 1975 - 76

<u>Rank</u>	<u>Number Full-time</u>	<u>Number Part-time</u>
(Professor)	18	-
(Associate Professor)	6	-
(Senior Lecturer)	49	-
(Assistant Professor)	83	-
(Lecturer)	129	-
(Junior Lecturer)	615	-
(Assistant Lecturer)	96	-
(Part-Time Lecturer)	-	162
	=====	=====
Total	996	162

ii) Total Student Enrolment 1975 - 76

	<u>Men</u>	<u>Women</u>	<u>Total</u>
Undergraduates	3,912	2,239	6,151
Graduates	624	502	1,126
Foreign Student	1	-	1
Total	4,537	2,741	7,278

Date : April 26, 1976

Signature

Prof. Dr. Sutharm Areekul
Vice-Rector for Academic Affairs

XII. カセサート大学各学部

Address: Bangkok 9, Thailand

Faculty of Agriculture

Dean: Assistant Professor Dr. Banjerd Boonsue

Agronomy Department

Head: Dr. Prasan Yingchol

Scope of Interests: Breeding and genetics for the improvement of yield and quality of several field crops: namely corn, sorghum, rice, cassava, soybean, mungbean, sugarcane, tobacco, and forage crops; Crop production and physiology: cultural practices of economic crops, water management and evaluation of growth analysis; Cropping system: evaluation of cropping pattern suitable for small farms under rain-fed condition; Forage production and pasture management; Weed science: control measures of weeds using herbicides and management; Seed technology: seed physiology study, seed storage techniques, seed certification; Climatology: finding out the water budget, heat budget and radiation budget in the field at different latitudes.

Animal Science Department

Head: Mr. Somkiat Timpatpong

Scope of Interests: Teaching and conducting researches in the fields of animal nutrition, physiology and artificial insemination, breeding and genetics, livestock management and disease control, dairy science, and meat science. Animals of interest are chicken, geese, ducks, quails, swine, cattle, dairy, buffaloes, goat, sheep and rabbits. The main objective of researches is for the benefit of small farms in the rural region.

Entomology Department

Head: Dr. Kwanchai Sombatsiri

Scope of Interests: Economic systematic entomology; medical and veterinary entomology; insect nutrition, and physiology; insect transmission of plant pathogen; chemical and biological control;

industrial and aquatic entomology.

The research work has been investigated in many fields of entomology both in fundamental and applied science. These researches will serve as the basic information to the farmers to solve problems concerning insect pests. The knowledge in industrial entomology such as sericulture, lac culture and apiculture may help the farmers increasing their incomes or developing the new career.

Farm Mechanics Department

Head: Mr. Prance Changchenkit

Scope of Interests: The basic requirements of farm mechanics and agricultural engineering dealing with farm workshop; machine tool operation; mechanical drawing; farm surveying; farm engine and machinery; farm structure; service of farm electricity; farm mechanics of materials; agricultural processing and irrigation and drainage. The operations and services of preharvest and postharvest machinery are in practice.

Research: 1. The affect of the use of farm machinery upon soil properties and crops yield.
2. The use of solar energy for farm processing.

Food Science and Technology Department

Head: Assistant Professor Narudom Boon-Long

Scope of Interests: General in food science and technology. Post harvest, storage, processing, preservation and utilization of economic commodities i.e. cereals and grains, fruits and vegetables, meat, poultry, dairy, and fat and oil products. Application of fermentation technology in food products and agricultural products. Quality control fundamental; food regulation; and product development. Food plant sanitation. Food additives and toxicology. Food engineering and machinery concerning food and other agro-industries.

Home Economics Department

Head: Professor Chuanchom Chandrapauraya

Scope of Interests: The Home Economics Department consists of four divisions:-

1. Division of Food and Nutrition

- 1.1 Interrelationships between foods and nutrition in general, family feeding and health, maternal diet and infant health.
- 1.2 Food service and school lunch program through the nutritional aspect.
- 1.3 Utilization and preservation of local food materials to improve family health and income for better living.

Research: on preschool child nutrition and food habit.

2. Division of Family and Child Development

- 2.1 Family relationships, population education, family planning and the quality of life, family guidance.
- 2.2 Study in child development, child care, child guidance and behavior problems in early childhood.
- 2.3 Methods of teaching and activities of pre-school children.

Research: on preschool child development both in mental and physical abilities.

3. Division of Housing and Related Art

- 3.1 Problems of providing housing facilities for family, planning spaces for functional and pleasant family living through principles of home management and interior design.
- 3.2 Management of family resources, consumer's education, use and care of household equipments and miscellaneous repairs.
- 3.3 Art and Handicrafts with emphasis on native materials and national designs to promote creativity as well as family income through home industries.

Research: Rural Home Development

4. Division of Clothing and Textiles

Teaching in production, properties, care, selection and quality control of clothing and textiles for general and specific needs. Clothing construction and costume design have been included.

Research: On the locally made and native textiles and clothing in the following aspects: quality and utilization of native and locally made textiles and their improvements, means and ways to utilize these products for costume, and household uses as well as for garments in home industry and factory.

Horticulture Department

Head: Mr. Paiboon Paireepierit

Scope of Interests: Teaching in pomology, olericulture, horticulture and general horticulture including postharvest horticulture and tissue culture is the primary goal. The staff also involves in mostly applied research works and extension to a certain extent. Research is emphasized on current economic crops.

Plant Pathology Department

Head: Mr. Pairoj Juangbhanich

Scope of Interests: The Department is responsible for teaching as well as researching in plant pathology. Numbers of courses at the undergraduate and graduate levels are offered. These are sufficient to accommodate for the Bachelor's and Master's programs in plant pathology. The Department also offers several small training courses in plant pathological fields and serves the surrounding communities in informing and solving problems concerning plant diseases. Research activities and works of the following fields: mycology, bacteria, fungi, virology, mycoplasma, nematode, seed pathology and postharvest diseases are conducted in the areas of taxonomy, physiology and biochemistry of host-parasite interaction, epidemiology and control measures.

Soil Science Department

Head: Dr. Sorasith Vacharotayan

Scope of Interests: Teaching, research and consultation.
Teaching: Offer courses in the field of soil science for both undergraduate and graduate (M.S. and Ph.D.) levels. Courses are soil

fertility, soil chemistry, soil microbiology, soil physics, soil genesis and classification and soil management and conservation.

Research: Conducting researches relating to the above fields of studies.

Consultation: Offer consultation in soil fertility and fertilizer use.

Faculty of Fisheries

Dean: Associate Professor Mek Boonbrahm

Aquaculture Department

Head: Assistant Professor Wit Tarnchalanukit

Scope of Interests: The Department is in charge of teaching, researching and carrying extension services in aquaculture.

Principles of aquaculture, fish food and feeding, fish culture, fish breeding, coastal aquaculture and inland fishery management are the main subject interests of the Department. The Department also puts an emphasis on improving and developing aquacultural methods, and techniques in fertilization of ponds; on comparative performance of different techniques of pond culture; on intensive culture of some economical freshwater fishes, softshell turtle and frogs in small ponds, tanks and cages; induced spawning of fish by hormone injection, fish hybridization and fish nutrition. These are the activities of the research projects. All of these are done with the purpose of increasing fish production of the country. Moreover, training in aquaculture is also yearly arranged for young men of the fish farmer families. Extension services are included as well.

Fishery Biology Department

Head: Assistant Professor Khanjanapaj Lewmanomont

Scope of Interests: The Department takes its responsibility in both academic and research works in fishery and aquatic biology. The fields of interests may be divided into three parts. The first includes biology and taxonomy of fishery resources both animals and plants. The second part deals with studies or properties of aquatic environment and water pollution. The third concerns with biology

and dynamics of fisheries and animal populations. The aim of the department is to train fishery or aquatic biologists at bachelor's and master's degrees levels. Besides, the Department engages in the graduate program in environmental science of the Graduate School, Kasetsart University. For research activity, our master research project, a four-year project, is the study of effects of water pollution on aquatic life and fisheries. This project includes both field surveys of water properties, aquatic organisms and experimental works in the laboratory.

Fishery Management Department

Head: Assistant Professor Satuan Pinnoi

Scope of Interests: Fisheries in general; fishery resource conservation and fishery management: how to use and to maintain our aquatic resources wisely, and how to manage and how to improve fishery resources by using concepts in fishery biology, fishery economics, and fishery laws and regulations which enable to bring about maximum sustainable yields; fishery economics, especially in fishery production function, cost of production analysis, and price and marketing analyses; fish farm management: how to manage fish farms by applying economic knowledges and by selecting suitable fish culture technics depending on sizes of farms, locations, labors, capitals, etc., and socio-economics of owners; fishery administration; fishery policy; fishery cooperatives; fishery extention.

Fishery Product Department

Head: Assistant Professor Tasanee Sorasuchart

Scope of Interests: The Department prepares Fish Technologists in both industry and government. The undergraduate programs emphasize the role of basic physical and biological sciences in the solution of problems that have resulted from technological progresses in fish processing industry. The research programs are concerned with development of marine, freshwater and aquaculture products. Advice and consultation on problems of fish and shellfish technology

and also provided for the public.

The research activities within the department are concentrated on fish microbiology, radiation processing of fish and shellfish, improvement of fishery product quality and processes for high quality control, production of the new nutritious products from underutilized resources and toxicants occurred in fishery products.

Marine Science Department

Head: Dr. Mahn Bhovichitra

Scope of Interests: The Department is active in teaching and doing research on how to exploit our natural marine resources wisely. Four principle courses in chemical, physical, biological and geological oceanography are offered together with some other professional courses such as coastal navigation, fishing gears, meteorology, and aquaculture so as to train competent scientists in the career of marine fishery.

Faculty of Forestry

Dean: Assistant Professor Dr. Chongrak Prichananda

Conservation Department

Head: Dr. Kasem Chunkao

Scope of Interests: General conservation; watershed management; wildlife management, outdoor recreation; range science; forest hydrology; micrometeorology; and environmental science. The Department has provided four undergraduate programs in watershed management, wildlife management, outdoor recreation, and range management; including two graduate programs in watershed management and environmental science. Graduate programs are in wildlife management, outdoor recreation, and range science. Two research projects are on "Watershed Research on Mountainous Land in Chiangmai" and "Soil and Water Losses from Small Plots in Lampang". Some necessary basic data of various types of forests as related to climate, rainfall, sediment yields, runoff, water balance, and environmental impacts are collected to be applied in proper land

utilization particularly in the shifting areas of the whole country. Projects of wildlife ecology, outdoor recreation, and range management are receiving more interests for the time being.

Forest Biology Department

Head: Dr. Somsak Sukwong

Scope of Interests: The aim of the Department is to offer programs of study and professional training to students who wish to specialize in forest biological sciences. Programs of study leading to the bachelor of science and the master of science degrees are available. Interests in the Department are the fields of forest botany, forest pathology, forest entomology, forest genetics and morphology, tree physiology, forest zoology, forest ecology and environmental biology. Researches in the Department are presently concentrated on the preparation of the manual for identification of tree seedlings, medicinal and poisonous plants; biology and propagation of wild animals; forest pest biology and control; forest regeneration; structure, function and dynamics of the undisturbed seasonal and evergreen tropical forest vegetation; and the effects of pollutants on terrestrial biotic communities.

Forest Engineering Department

Head: Associate Professor Prathuang Thumnitayakul

Scope of Interests: The Department prepares students to perform a wide range of engineering operations relating to the management of forest lands. The courses include designing and constructing roads, bridges and other structures; developing logging plans, and adapting logging systems which will aid in achieving quality resource management.

Students are trained to analyze and evaluate engineering systems in order to integrate the mechanical and economic facilities of forest operations with the biological requirements of the forest and the needs to protect soil and water resources.

Research in Forest Engineering has the objectives in studying logging method, logging transportation, forest road construction

including proficiency in using modern mechanical instruments the effects of which are on environment within economic and biological facilities.

Forestry Management Department

Head: Dr. Lert Chuntanaparb

Scope of Interests: The Department offers wide opportunity for either specialization or breadth in undergraduate and advanced study. The scope of interests both in teaching and research cover four major areas of concentration as follows:

(1) Forest Resource Management is designed to provide students with the courses in Forest Management, Planning, Policy, Extension, and Administration.

(2) Forest Economics which involve Forest Valuation, Managerial Economics. Industry Economics and Forest Production Economics.

(3) Quantitative Science provides instruction in Forest Measurement, Biometry, and Forest Inventory.

Forest Products Department

Head: Professor Chote Raktiprakara

Scope of Interests: Major and minor forest products; wood anatomy, structure- property relation; wood physics; timber mechanics; wood chemistry; protective treatments, and transport processes; polymeric adhesives and coatings; bonded material technology; pulp and paper technology.

Silviculture Department

Head: Assistant Professor Choob Khemnark

Scope of Interests: Theories and principles of silvics and silviculture; seeding and planting; forest tree seeds and tree improvement; forest soils and tree nutrition; forest protection; and the application of silvicultural practices in forest management.

Faculty of Veterinary Medicine

Dean: Professor Rampung Dissamarn

Anatomy Department

Head: Mr. Boontham Chongcharoen

Scope of Interests: Chromatolysis of the motor neurons of the spinal cord and postnatal development of the reproductive system of the laboratory and domestic animals are the main areas of interest of the Department.

The disciplines, such as gross, developmental and microscopic anatomy, (morphology and physiology) are woven into total fabric of anatomical research as applied to domestic animals. It is made to correlate gross and microscopic structure with normal and abnormal development.

Pathology Department (Division of Microbiology)

Head: Dr. Damrong Pruksaraj

Scope of Interests: History of bacterology, mycology, virology, immunology; general bacteriology, mycology, virology, immunology; classification of bacteria, fungi, viruses; media preparation for bacteria, fungi, cell culture; technics in isolating and identifying bacteria, fungi, viruses of animals; bacteria concerning to sanitation for human consumption; cultivation and preservation of viruses; properties of antigen and antibody formation; method of some vaccines and hyperimmunesera production used in veterinary field; diagnosis of some infectious diseases in animal by serological methods; prevention and control of contagious diseases by immunological methods.

Physiology Department

Head: Dr. Chitta Anukul

Scope of Interests: Cardiovascular physiology, respiration, gastrointestinal physiology, metabolism, endocrine system, reproductive system and lactation, nerve and muscle physiology of domestic animals, applied physiology in veterinary practice for

clinical diagnosis, prognosis, basic clinical treatment and field work.

Research Interest: At present, the knowledge of meat quality in pig has become a serious study and an attempt has been made to find out some blood parameter that might be used as prognostic in meat quality and meat properties instead of meat color. We are interested in investigation the reliability and the possible relationship between blood parameters and different carcass characteristics.

Veterinary Medicine Department

Head: Professor Rampung Dissamarn

Scope of Interests: A study of some infectious diseases on large animals including the epidemiology, incidence, diagnosis, prevention and control. A special interest is given in Mastitis, Brucellosis, Tuberculosis and hog-cholera control program. Identification of new diseases which are not known in Thailand are also concentrated. Parasitic infectious such as Fascioliasis, Babesiosis, Trichinosis as well as Veterinary public health are also interested.

Veterinary Pathology Department

Head: Dr. Chitta Anukul

Scope of Interests: 1. Responsibility in the teaching of:-

(a) General Pathology: A study of pathological changes in various organs including blood and blood forming organs, and their after-effects.

(b) Special Pathology: A study of pathological changes in various organs and systems causing by animal diseases.

(c) Clinical Pathology: The course includes a full term lecture and laboratory instruction on the clinical application of the knowledge and techniques of several basic courses in Veterinary medicine, such as, anatomy, physiology, pathology and biochemistry and other specific tests for the disturbed organic function. It also concerns with the actual clinical investigation, the indication for laboratory examination and the interpretation of the altered laboratory findings in the clinical cases.

2. Responsibility in post-mortem examination (autopsy)

3. Research interests: At present the Department in collaboration with the Department of Animal Science is studying the pathological changes in genital organs of cattle which are affected by Brucellosis.

Veterinary Pharmacology Department

Head: Professor Prasob Buranamas

Scope of Interests: Basic and practical principles about drug origins, action of drugs, metabolism of drugs chemotherapeutics, toxicology, hormones, vitamins, vaccines and sera, drugs acting upon the nervous system, drugs acting upon the alimentary system, drugs acting upon the heart and circulatory system, drugs acting upon the respiratory, urinary and reproductive systems, the anthelmintics, the agents affecting the skin, beneficial minerals, drugs having special effects, dispensing pharmacy, weights and measures, prescription writing and legal obligation.

Research Interests: The use of native herbs in Thailand for animal treatment and the survey for the native herbs are being done. A plan of extracting them calls for more attention in research field.

Veterinary Surgery Department

Head: Assistant Professor Pibul Chai-Anan

Scope of Interests: The Department has the responsibility in the field of animal reproduction, veterinary diagnostic radiology and surgical treatment in large and domestic animals. The Animal Hospital is established to serve public on this purpose. More interests are put in animal reproduction concerning infertility in cattle and swine, especially on avitaminosis, mineral deficiency as well as venereal diseases.

Faculty of Economics and Business Administration

Dean: Assistant Professor Dr. Sopin Tongpan

Agricultural Economics Department

Head: Assistant Professor Dr. Kamphol Adulavidhaya

Scope of Interests: Undergraduate and graduate programs in Agricultural Economics are currently offered. The Doctoral program will be launched in 1979. Scope of Interests include Agricultural Production Economics, Farm Management, Agricultural Marketing and Prices, Agricultural Finance, Land Economics, Agricultural Policies, International Trade policy in Agricultural Commodities, Agricultural Development, Resource Economics, Resource Conservation and Development, Rural Development, Research Methodology in Agricultural Economics, Mathematical and Statistical Analysis for Agricultural Economics, and Agribusiness. The undergraduate program includes about 200 hours of field work before graduation.

Research Interests: A special emphasis is placed on research capacity, particularly on the following fields Production and Farm Management, Agricultural Marketing and Prices, Agricultural Finance, Fisheries, Forestry and Water Resource Development, Economics of Rural Development and Problems, International Trade Policies in Agricultural Commodities, and other related economic problems.

Cooperative Science Department

Head: Professor Pipat Suchinda

Scope of Interests: Cooperative Principles and Practices; Cooperative Doctrine; Agricultural Cooperative Credit; Marketing and Purchasing; Non-Agricultural Cooperative Credit; Store and Service; Cooperative Management; Cooperative Organization, Operation, Supervision and Promotion; Research Methods in Cooperatives; Cooperative Seminar and Special Problems.

Research Interests: Projects on Socio-Economic Study of Land-Settlement in relating to Agricultural cooperatives formation; Cooperative Stores; Evaluation of economic benefits and managerial efficiency of selected agricultural cooperatives; Analysis of Cooperative Structure being conducive to Cooperative Development.

Table 1

Number of Courses Taught, Student Credit Hours (SCH = Credit Hour / Student) Faculty Member, SCH per Faculty Member, Government Budget, and Cost per SCH in 1975-76, by Faculty.

Faculty	No. of Courses Taught		Student Credit Hours (SCH) Produced			No. of Faculty Mb.	SCH per Fc.Mb.	Govt. Budget (M.Baht)	Cost per SCH (Baht)
	1 st. sem.	2 nd. sem.	1 st. sem.	2 nd. sem.	Total				
KASETSART UNIVERSITY	775	807	124,448	112,068	236,516	1,063 ⁽¹⁾	274	326.70 (87.30)	369
1) Faculty of Agriculture	171	194	17,715	19,072	36,787	208(+15) ⁽²⁾	177	(26.49)	720
2) Faculty of Fisheries	33	41	915	1,133	2,048	35	59	(3.31)	1,616
3) Faculty of Forestry	39	36	1,920	1,842	3,762	60	63	(5.71)	1,518
4) Faculty of Sci. & Arts	192	193	58,875	47,836	106,711	222	483	(19.78)	179
5) Faculty of Engineering	72	75	6,167	6,499	12,666	80	158	(9.78)	772
6) Faculty of Education	75	76	6,216	5,645	11,861	59(+187)	201	(5.29) (+8.38)	446
7) Faculty of Econs. & Bus. Adm.	78	77	15,376	16,735	32,111	96	335	(7.48)	233
8) Faculty of Social Sciences	73	71	12,785	9,275	22,060	43	513	(4.22)	191
9) Faculty of Veterinary Med.	26	29	3,174	3,177	6,351	53	120	(4.19)	660
10) Office of Extension & Training (Interdepartmental prog.)	16	15	1,305	854	2,159	15(+3) ⁽³⁾	120	(1.05)	486

(1) Included 187 instructors of KU. Demonstration School (Faculty of Ed.)

(2) The actual number of faculty member of Fac. of Ag. is 223 (included 8 in KU. Training 3 in Dean's Offices, and 3 in Ag. Extn. Division)

(3) (+3) faculty member from Ag. Extn. Division, Faculty of Agriculture.

Table 2

Number of Courses Taught, Student Credit Hours Produced, Faculty Member, SCH per Faculty Member, Government Budget, and Cost per Student Credit Hour in 1975 - 76, by Department

Faculty and Department	No. of Courses Taught		Student Credit Hours (SCH) Produced			No. of Faculty Mb.	SCH per F c.Mb.	Govt. Budget (M. Baht)	Cost per SCH (Baht)
	1 st. sem.	2 nd. sem.	1 st. sem.	2 nd. sem.	Total				
FACULTY OF AGRICULTURE									
Department									
1) Farm Mechanics	12	14	1,276	500	1,776	11	162	2.13	1,199
2) Entomology	18	18	1,970	1,967	3,757	19	198	4.52	1,203
3) Plant Pathology	15	15	1,072	2,059	3,131	22	142	2.51	802
4) Soil Science	19	24	2,535	2,579	5,114	23	222	2.69	526
5) Agronomy	21	23	3,822	2,992	6,814	35	192	2.92	429
6) Horticulture	26	30	2,322	3,582	5,904	29	204	3.05	517
7) Animal Science	19	25	2,638	2,470	5,108	29	176	3.67	718
8) Home Economics	25	27	1,492	1,805	3,297	18	183	2.43	737
9) Food Sci. & Technology	16	18	768	1,118	1,886	22	86	2.56	1,357
Total	171	194	17,175	19,072	36,787	208(+15)	(\bar{X} =177)	26.49	(\bar{X} =720)
FACULTY OF FISHERIES									
Department									
1) Fishery Management	4	5	193	258	451	4	113	0.59	1,308
2) Fishery Biology	11	12	314	214	528	11	48	0.82	1,553
3) Aquaculture	5	4	105	249	354	4	89	0.68	1,921
4) Fishery Products	5	6	147	120	267	5	53	0.51	1,910
5) Marine Science	8	14	156	292	448	11	41	0.72	1,607
Total	33	41	915	1,133	2,048	35	(\bar{X} =50)	3.31	(\bar{X} =1616)

Table 2 (Cont.)

Faculty and Department	No. of Courses Taught		Student Credit Hours (SCH) Produced			No. of Faculty Mb.	SCH per Fc.Mb	Govt. Budget (M.Baht)	Cost per SCH (Baht)
	1 st. sem.	2 nd. sem.	1 st. sem.	2 nd. sem.	Total				
FACULTY OF FORESTRY									
Department									
1) Forest Management	10	6	715	372	1,123	12	94	0.99	882
2) Forest Biology	9	6	273	336	609	10	61	0.88	1,445
3) Forest Product	3	6	192	141	333	13	26	1.15	3,453
4) Silviculture	11	10	471	352	823	9	91	0.97	1,179
5) Forest Engineering	2	1	196	184	380	8	48	0.85	2,237
6) Conservation	4	7	37	457	494	8	62	0.87	1,761
Total	39	36	1,920	1,842	3,762	60	(\bar{X} =63)	5.71	(\bar{X} =1518)
FACULTY OF SCIENCE & ARTS									
Department									
1) Mathematics	20	20	12,750	9,169	21,919	24	913	2.55	116
2) Chemistry	21	23	9,517	6,675	16,192	37	438	3.30	204
3) Biology	68	58	11,714	8,877	20,591	66	312	5.19	252
4) Physics	12	14	8,355	9,711	18,066	23	786	2.80	155
5) Statistics	14	14	3,742	4,086	7,828	14	559	2.00	255
6) Languages	57	64	12,797	9,318	22,115	57	388	3.94	180
Total	192	193	58,875	47,836	106,711	221	(\bar{X} =483)	19.78	(\bar{X} =179)
FACULTY OF ENGINEERING									
Department									
1) Hydraulics and Hydrology	4	2	340	835	1,175	5	235	1.18	1,004
2) Agricultural Engineering	5	6	63	63	126	11	12	1.41	11,190
3) Mechanical Engineering	13	14	2,252	2,178	4,430	16	227	1.35	305

Table 2 (Cont.)

Faculty and Department	No. of Courses Taught		Student Credit Hours (SCH) Produced				No. of Faculty Mb.	SCH per Fac.Mb.	Govt. Budget (M.Baht)	Cost per SCH (Baht)
	1 st. Sem.		2 nd. Sem.		Total					
	1 st. Sem.	2 nd. Sem.	1 st. Sem.	2 nd. Sem.						
4) Irrigation Engineering	8	11	131	240	371	10	37	1.47	3,962	
5) Electrical Engineering	27	28	1,639	1,601	3,240	14	231	2.26	698	
6) Civil Engineering	15	14	1,742	1,582	3,324	24	139	2.11	635	
Total	72	75	6,167	6,499	12,666	80	(\bar{X} =158)	9.78	(\bar{X} =772)	
FACULTY OF EDUCATION										
Department										
1) Education	39	39	2,544	2,178	4,722	27	175	2.11	447	
2) Vocational Education	17	17	906	981	1,887	15	126	1.59	843	
3) Physical Education	19	20	2,766	2,486	5,252	17	309	1.59	303	
Total	75	76	6,216	5,645	11,861	(59(+187))	(\bar{X} =201)	5.29(+838)	(\bar{X} =446)	
OFFICE OF EXTENSION & TRAINING										
(Interdepartmental Program: Agricultural Extension Ed.)										
	16	15	1,305	854	2,159	15+3+1	114	1.05	486	
FACULTY OF ECON. & BUSI, ADM.										
Department										
1) Economics	30	22	5,194	6,833	12,027	20	601	1.63	136	
2) Agricultural Economics	19	19	3,371	3,051	6,422	28	229	1.77	276	
3) Cooperative	4	7	635	774	1,409	12	117	1.03	731	
4) Accounting	8	10	2,024	2,530	4,554	13	350	1.13	248	
5) Business Administration	15	18	3,762	3,229	6,991	16	437	1.22	175	
6) Marketing	2	1	390	318	708	7	101	0.70	989	
Total	78	77	15,376	16,735	32,111	96	(\bar{X} =335)	7.48	(\bar{X} =233)	

Table 2 (Cont.)

Faculty and Department	No. of Courses Taught		Student Credit Hours (SCH) Produced			No. of Faculty Mb.	SCH per Fac. Mb.	Govt. Budget (M. Baht)	Cost per SCH (Baht)
	1 st. Sem.	2 nd. Sem.	1 st. Sem.	2 nd. Sem.	Total				
FACULTY OF SOCIAL SCIENCES									
Department									
1) Psychology	13	16	3,304	1,726	5,030	9	559	0.84	167
2) Geography & History	20	13	3,474	563	4,037	9	449	0.91	225
3) Philosophy & Religions	9	9	734	1,338	2,072	3	679	0.58	280
4) Pol.Sci. & Public Adm.	9	10	979	1,375	2,354	7	336	0.82	348
5) Sociology & Anthro.	22	23	4,294	4,272	8,567	15	571	1.07	125
Total	73	71	12,785	9,275	22,060	43	(\bar{X} =513)	4.22	(\bar{X} =191)
FACULTY OF VETERINARY MED.									
Department									
1) Anatomy	4	4	461	466	927	8	116	0.62	669
2) Pathology	6	10	655	850	1,505	14	108	0.93	618
3) Pharmacology	1	1	205	205	401	5	82	0.51	1,244
4) Surgery	4	4	548	654	1,202	8	150	0.65	541
5) Physiology	3	4	320	409	729	6	122	0.60	823
6) Medicine	8	6	985	593	1,578	12	132	0.88	558
Total	26	29	3,174	3,177	6,351	53	(\bar{X} =120)	4.19	(\bar{X} =660)

Table 3

Earned Degrees, Rank, and Sex of Faculty Members of Kasetsart University in 1975 - 76, by Faculty

Faculty	Total	Earned			Degrees		Rank			Sex	
		Ph.D.	Dr.M. V.	MS.	BS.	Prof.	Asso. prof.	Ass. prof.	Instr.	Male	Female
Total	1,078	124	9	581	363	16	25	192	845	576	502
Faculty											
1) Agriculture	223	60	-	117	46	6	7	53	157	163	60
2) Fisheries	35	5	-	20	10	-	1	10	24	23	12
3) Forestry	60	12	-	36	12	2	2	18	38	59	1
4) Science and Arts	221	14	-	141	66	2	8	39	172	57	164
5) Engineering	80	7	-	46	27	-	-	16	64	76	4
6) Education	246	10	-	94	142	1	-	17	228	61	185
7) Econ. & Busi. Adm.	96	10	-	67	19	1	6	23	66	66	30
8) Social Sciences	43	3	-	37	3	1	1	8	33	15	28
9) Veterinary Medicine	53	1(+1)	9	8	34	3	-	4	46	45	8
Graduate Sch.	4	-	-	2	2	-	-	-	4	-	4
Office of Extn. & Training	17	2	-	13	2	-	-	4	13	11	6

Table 4

Cost of Government Budget per Head per Year of Student in each Bachelor's Degree Program of Kasetsart Univ. in 1975 - 76.

No.	Bachelor's Degree Programs	Cost of Govt. Budget per Head per Year of Student					Average per yr.
		1 st. yr.	2 nd. yr.	3 rd. yr.	4 th. yr.	Total	
FACULTY OF AGRICULTURE							
1.	B.S. (Home Econs.)	8,302	16,360	23,193	19,794	67,646	16,912
2.	B.S. (Food Sci. & Tech)	9,505	24,743	34,116	30,103	98,467	24,617
3.	B.S. (General Ag.)	10,942	9,002	20,119	20,160	60,223	15,056
4.	B.S. (Ag. Extension)	10,942	18,761	18,205	22,712	70,620	17,655
5.	B.S. (Farm Mech)	10,942	17,038	35,596	33,450	97,026	24,257
6.	B.S. (Entomology)	10,942	13,780	22,710	32,532	79,964	19,991
7.	B.S. (Plant Pathology)	10,942	11,523	24,315	30,906	77,688	19,422
8.	B.S. (Soil Science)	10,942	12,621	20,326	23,155	67,044	16,761
9.	B.S. (Agronomy)	10,942	9,957	16,310	17,855	55,064	13,766
10.	B.S. (Horticulture)	10,942	10,761	19,539	18,821	60,063	15,016
11.	B.S. (Animal Sci.)	10,942	14,721	19,707	23,060	68,430	17,108
FACULTY OF FISHERIES							
12.	B.S. (Fishery Biology)	6,795	20,461	26,243	44,014	97,513	24,378
13.	B.S. (Fishery Management)	7,515	17,396	18,654	53,930	97,495	24,374
14.	B.S. (Fishery Product)	7,515	17,396	30,151	55,589	110,650	27,663
15.	B.S. (Aquaculture)	7,515	19,741	26,275	50,672	104,203	26,051
16.	B.S. (Marine Science)	7,515	17,396	28,304	55,889	109,104	27,276
FACULTY OF SCIENCE & ARTS							
17.	B.S. (Mathematics)	7,950	6,093	5,127	6,770	29,940	6,485
18.	B.A (Mathematics)	7,114	6,167	5,351	6,482	25,117	6,279
19.	B.S. (Chemistry)	7,742	7,194	7,188	6,528	29,372	7,344
20.	B.S. (Microbiology)	7,335	7,786	10,799	7,033	32,923	8,231
21.	B.S. (General Biology)	7,335	7,786	8,855	11,311	35,287	8,822

Table 4 (Cont.)

No.	Bachelor's Degree Programs	Cost of Govt. Budget per Head per Year of Student					Average per yr.
		1 st. yr.	2 nd. yr.	3 rd. yr.	4 th. yr.	Total	
22.	B.S. (Botany)	7,335	7,786	8,635	7,507	31,263	7,816
23.	B.S. (Zoology)	7,355	7,786	8,129	7,255	30,505	7,626
24.	B.S. (Radiations and Isotopes)	7,335	8,143	7,038	7,464	29,980	7,495
25.	B.S. (Physics)	7,742	6,050	5,191	4,735	23,718	5,930
26.	B.S. (Statistics)	7,946	6,540	6,535	7,442	28,453	7,113
27.	B.S. (General Sciences)	7,335	7,556	6,757	5,596	25,499	6,375
28.	B.A. Thai	8,190	7,070	6,461	5,907	27,628	6,907
29.	B.A. English	8,190	7,070	6,282	6,086	27,628	6,907
FACULTY OF ENGINEERING							
30.	B. Eng. (Agricultural)	7,511	13,948	52,265	100,287	184,011	43,503
31.	B. Eng. (Mechanical)	7,511	13,948	14,702	11,285	47,446	11,862
32.	B. Eng. (Electrical)	7,511	13,948	19,902	22,336	63,697	15,924
33.	B. Eng. (Irrigatn.)	7,511	13,948	35,690	97,993	155,142	38,786
34.	B. Eng. (Civil)	7,511	13,948	25,156	21,315	67,930	16,983
FACULTY OF SOCIAL SCIENCES							
35.	B.S. (Psychology)	7,807	6,229	6,778	5,082	25,896	6,474
36.	B.S. (Philos. & Religions)	7,673	9,600	8,745	8,719	34,737	8,684
37.	B.A. (Geography)	7,388	7,548	7,917	6,219	29,072	7,268
38.	B.A. (History)	8,334	7,815	7,767	5,913	29,529	7,382
39.	B.A. (Political Sci.)	7,659	9,634	11,304	11,934	40,533	10,133
40.	B.A. (Sociology & Anthro)	7,659	6,291	4,573	3,896	22,419	5,605
FACULTY OF ECON. & BUSINESS ADM.							
41.	B.S. (Marketing)	7,093	10,152	18,667	23,926	59,838	14,950
42.	B.S. (Accounting)	7,093	6,863	12,037	11,457	37,450	9,360
43.	B.S. (Business Adm.)	7,093	10,325	11,544	5,666	34,628	8,657
44.	B.S. (Economics)	7,093	6,774	5,602	4,779	24,248	6,062

Table 4 (Cont.)

No.	Bachelor's Degree Programs	Cost of Govt. Budget per Head per Year of Student						Average per yr.
		1 st. yr.	2 nd. yr.	3 rd. yr.	4 th. yr.	Total		
45.	B.S. (Ag. Econs.)	7,113	12,919	9,894	8,076	38,002	9,501	
46.	B.S. (Cooperative Sci.)	7,093	13,599	14,075	13,160	47,927	11,982	
	FACULTY OF FORESTRY							
47.	B.S. (Forest Management)	7,113	31,122	48,348	45,763	132,346	33,087	
48.	B.S. (Forest Products)	7,113	31,122	51,575	75,745	165,555	41,389	
	FACULTY OF EDUCATION							
49.	B.S. (Ag. Ed.)	8,262	16,554	20,965	20,001	65,781	16,445	
50.	B.S. (Physical Ed.)	7,021	10,649	12,909	10,635	41,214	10,304	
51.	B.A. (Physical Ed.)	7,206	12,258	14,040	10,374	43,878	10,970	
	FACULTY OF VETERINARY MED.							
52.	D.V.M.	6,693	7,706	27,878	30,454			
					22,122(5th.yr.)			
					20,898			
					(6th.yr.)	115,751	19,292	
					(6yrs.prog.)			

XIV 建築予定(第1期計画)

Kamphaengsaen Campus

K 1	- Administration and maintenance buildings, health center, faculty club, general hall and gymnasium, central dining hall and university center	10,122 M ²
K 2 a	- Central library with facilities for Faculty of Economics and Business Administration	3,200 M ²
K 2 b	- Faculty of Agriculture buildings	10,774 M ²
K 2 c	- Faculty of Engineering buildings	2,215 M ²
K 2 d	- Central lecture room building	2,700 M ²
K 2 e	- Faculty of Veterinary Science buildings	8,630 M ²
K 3	- Dormitories and dormitory dining hall	26,247 M ²
K 4 a	- Farm buildings	11,325 M ²
K 4 b	- Faculty and staff housing	24,375 M ²
K 4 c	- Labor housing	5,900 M ²
K 4 d	- Primary school	1,750 M ²
Total Cost Construction at Kamphaengsaen		฿ 296,181,000

Bangkhen Campus

B 1	- Administration building, central library, health center and central maintenance buildings	11,840 M ²
B 2	- Faculty of Agriculture building, machine shop, blacksmith shop, home economics building, demonstration house and Faculty of Economics and Business Administration building	8,400 M ²
B 3 a	- Faculty of Fisheries and Faculty of Science and Arts buildings	7,620 M ²
B 3 b	- Faculty of Forestry building	4,350 M ²
Total Cost Construction at Bangkhen		฿ 108,400,000

KASETSART DEVELOPMENT PROJECT

A. ESTIMATED BUILDING CONSTRUCTION SCHEDULE

6 JUN. '77

KAMPHAENGSAN CAMPUS

BID PACKAGES	K1	K2a	K2b	K2c	K2d	K2e	K3	K4a	K4b	K4c	K4d
1. INVITATION TO BID	ACTUAL 15 JUL. '76	ACTUAL 22 DEC. '76	ACTUAL 22 DEC. '76	ACTUAL 22 DEC. '76	ACTUAL 22 DEC. '76	ACTUAL 22 DEC. '76	ACTUAL 7 JUN. '76	ACTUAL 25 NOV. '75	ESTI- MATED 1 JUL. '77	ESTI- MATED 24 JAN. '77	ESTI- MATED 20 JUN. '77
2. RECEIVE BIDS	ACTUAL 6 SEP. '76	ACTUAL 31 JAN. '77	ACTUAL 21 FEB. '77	ACTUAL 31 JAN. '77	ACTUAL 31 JAN. '77	ACTUAL 21 FEB. '77	ACTUAL 26 JUL. '76	ACTUAL 30 DEC. '75	ESTI- MATED 15 AUG. '77	ESTI- MATED 25 JUL. '77	ESTI- MATED 18 JUL. '77
3. BID EVALUATION AND CONTRACT RECOMMENDATION	ACTUAL MAY. '77	ESTI- MATED JUN. '77	ESTI- MATED JUN. '77	ESTI- MATED JUN. '77	ESTI- MATED JUN. '77	ESTI- MATED JUN. '77	ACTUAL 4 AUG. '76	ACTUAL 7 FEB. '76	ESTI- MATED 15 SEP. '77	ESTI- MATED 1 SEP. '77	ESTI- MATED 1 SEP. '77
4. START CONSTRUCTION	ESTI- MATED 1 JUL. '77	ESTI- MATED 1 AUG. '77	ESTI- MATED 1 AUG. '77	ESTI- MATED 1 AUG. '77	ESTI- MATED 1 AUG. '77	ESTI- MATED 1 AUG. '77	ACTUAL 14 SEP. '76	ACTUAL 22 MAR. '76	ESTI- MATED 15 OCT. '77	ESTI- MATED 1 OCT. '77	ESTI- MATED 1 OCT. '77
5. COMPLETE CONSTRUCTION	ESTI- MATED 30 SEP. '78	ESTI- MATED 31 JUL. '78	ESTI- MATED 30 NOV. '78	ESTI- MATED 31 JUL. '78	ESTI- MATED 30 NOV. '78	ESTI- MATED 30 SEP. '78	ESTI- MATED 16 APR. '78	ACTUAL 26 APR. '77	ESTI- MATED 15 APR. '79	ESTI- MATED 30 SEP. '78	ESTI- MATED 30 SEP. '78

K1	1.	Administration building	2,178 m ²
	2.	Maintenance	492
	3.	Health center	312
	4.	Faculty club	860
	5.	General hall/gymnasium/swimming pool	4,144
	6.	Central dining hall	1,054
	7.	University center	2,438
K2	8.	Central library	2,855
	9.	Central lecture building	4,393
	10.	Faculty of Agriculture building	11,106
	11.	Faculty of Veterinary Science buildings	4,886
	12.	Faculty of Engineering buildings	2,576
K3	13.	Dormitories (16)	23,206
	14.	Dormitory dining hall	1,836
K4	15.	Form and research buildings (52)	11,897
	16.	Staff housing (270)	31,389
	17.	Primary school	1,398
	18.	Form station housing	6,249
Total			113,269 m ²

B. Description of buildings

Item	Description	Quantity Unit	Space per unit m ²	Total space m ²
1.	<u>Administration Building</u>			
1.1	Entrance hall, waiting area and exhibition space	-	-	40
1.2	Information counter, radio-link and telephone junction	-	-	50
1.3	Director general office	1	18	18
1.3.1	W.C.	1	6	6
1.3.2	Secretary room	1	9	9
1.3.3	Waiting area	-	9	9
1.4	Vice-director general offices	2	18	36
1.5	Specialists' offices	4	18	72
1.6	Co-ordinating staffs' office (20 persons @ 25 m ²)	1	100	100
1.7	Faculty offices	10	12	120
1.8	Trainee office (3.5 m ² /man)	1	28	28
1.9	Board conference room (30 persons @ 1.8 m ²)	1	54.6	54.6
1.10	VIP room and pantry	1	18	18
1.11	General office (15 officers @ 3.5 m ²)	1	52.5	52.5
1.12	Storage	1	24	24
1.13	Library	1	48	48

Utilized space 701.10 m²
 aircondition, @ 500 BTU/m² = 350,550 BTU
 = 29.2129 tons (30 tons) @ ₱ 30,000
 (Central Unit) = ₱ 900,000

Circulation and stairway space 70 m²
 (10% of the utilized space)

Total space for administration building
 771.10 m², standard design ₱ 3,000/m²
 = ₱ 2,313,300 plus airconditioner
 = ₱ 3,213,300

Item	Description	Quantity Unit	Space per unit m ²	Total space m ²
2.	<u>Audio-visual Media Center</u>			
2.1	Department head office	1	16	16
2.2	Entrance hall, waiting area	-	20	20
2.3	Information counter	-	15	15
2.4	General department office space (4 officers @ 5 m ²)	-	20	20
2.5	Television production unit			
2.5.1	TV studio (4 m height)	2	150	300
2.5.2	Waiting and dressing room	2	20	40
2.5.3	Control room	1	40	40
2.5.4	Vidio tape recorder storage	1	40	40
2.5.5	Materials storage	1	40	40
2.5.6	Technical operation room	1	20	20
2.6	U.H.F. Broadcast	1	40	40
2.7	Audio Production Unit			
2.7.1	Sound track record room	2	15	30
2.7.2	Tape record room	1	25	25
2.7.3	Tape, recorder, etc, library	1	25	25
2.8	Graphic Production Unit			
2.8.1	Drawing room	1	200	200
2.8.2	Storage	1	9	9
2.9	Photographic Production and Photo-lab Unit			
2.9.1	Photograph room	1	15	15
2.9.2	Dark room (booth)	10	3.24	32.4
2.9.3	Dry and wash space	-	15	15
2.9.4	Film production	1	60	60
2.10	Public Service Facility Space			
2.10.1	Waiting area	-	60	60
2.10.2	Film, tape, vidio-tape library	1	40	40
2.10.3	Circulation service room	1	40	40
2.10.4	Exhibition space	1	150	150
2.10.5	Pre-view room (booth)	5	9	45

Item	Description	Quantity Unit	Space per unit m ²	Total space m ²
2.10.6	W.C.	-	-	30
2.10.7	Small auditorium (360 persons)	1	360	360
Utilized space 1,727.40 m ² airconditioner 500 BTU/m ² = 863,700 BTU = 71.978 tons (72 tons) @ ₱ 30,000 (central unit) = ₱ 2,160,000 Circulation and stairway space 10% = 173 m ² Total space 1,900 m ² , standard design ₱ 3,000/m ² = ₱ 5,701,200 plus aircondition = ₱ 7,861,200				
2.11	Garage; Mobile unit for outside training and demonstration	3	24	72
	Storage	1	40	40
Total space 112 m ² , standard design ₱ 1,500/m ² = ₱ 168,000				
3.	<u>Printing Shop Building</u>			
3.1	Printing area	-	200	200
3.2	Storage A	-	25	25
3.3	Storage B	-	50	50
3.4	Letter press room	1	30	30
3.5	Proof room	1	20	20
3.6	Dark room for film offset			
	3.6.1 Film offset lab (3x5)	1	15	15
	3.6.2 Dark room (3x3)	1	9	9
3.7	Office (5x5)	1	25	25
Total space 374 m ² plus 37 m ² of circulation and stairway 10 % = 411 m ² , standard design ₱ 2,300/m ² = ₱ 945,300				
4.	<u>Classroom Center</u>			
4.1	Audio-visual aid center	-	60	60
4.2	Classroom (60 persons); movable partition, natural ventilation to be enclosed space for aircondition	5	108	540
4.3	Discussion room (8 persons)	6	20	120
4.4	Training room (40 persons)	2	72	142
4.5	Coffee room	2	40	80

Item	Description	Quantity Unit	Space per unit m ²	Total space m ²
4.6	Printing officer room	1	20	20
4.7	Control room (sound enter)	1	9	9
4.8	Top floor; for general uses	-	-	-
4.9	Faculty offices	6	12	72
	Utilized space 1,043 m ² airconditioner 500 BTU/m ² = 521,500 BTU = 43.46 tons (44 tons) @ ₦ 30,000 = ₦ 1,320,000, Circulation and stairway 10 % = 104 m ² , Total space 1,147 m ² , the first floor is crash area 1,000 m ² , therefore total space = 2,147 m ² , standard design ₦ 3,000 / m ² = ₦ 6,441,000 plus airconditioner = ₦ 7,761,000			
5.	<u>Main Storage and Field Equipment Unit</u> To be the store for two small tractors six cars, field equipment, etc. and the office for circulation service; space 30x12 = 360m ² , standard design ₦ 1,500/m ² = ₦ 540,000			360
6.	<u>Cafeteria;</u> Control services, 3 meals, 500 persons, usage factor 0.75 % of total inhabitant = 375 persons @ 1.5 m ² = 562.5 m ²			
6.1	Dining space	-	-	562.5
6.2	Cooking space (20% of dining space)	-	-	112.5
6.3	W.C.	-	-	20
	Total space 695 m ² (700 m ²), standard design ₦ 2,300/m ² = ₦ 1,610,000			
7.	<u>University Hotel and Dormitory</u>			
7.1	<u>University Hotel</u> (for international trainee)			
7.1.1	Bed unit; 2 single bed, living quarter space, w.c., build in cabinet, space 3.6 x 8 m ² , 60 persons maximum	30	28.8	864
7.1.2	Lobby, common room, formation and register counter	-	150	150
7.1.3	Living room	-	50	50
7.1.4	Snack area (30 persons each)	-	2.5	75
7.1.5	Laundry, self-contained (6x6)	-	36	36

Item	Description	Quantity Unit	Space per unit m ²	Total space m ²
	Utilized space 1,175 m ² plus 118 m ² of circulation and stairway 10 % = 1,293 m ² plus airconditioner 54 tones @ ₦ 30,000 = ₦ 1,620,000			
7.1.6	Lining store and service space	-	40	40
	Total space for university hotel 1,333 m ² standard design ₦ 3,000/m ² = ₦ 3,999,000 plus airconditioner = ₦ 5,619,000			
7.2	Dormitory for officers; Two persons/unit, single bed and central w.c. at each wing of building			
7.2.1	Bed unit, two single bed, building cabinet, living quarter and study space, two persons/ room	60	25	1,500
7.2.2	W.C.	2	60	120
7.2.3	Lobby, common room, information counter	-	75	75
7.2.4	Lining storage and officer room	2	35	70
7.2.5	Laundry, self-contained	-	36	36
	Total space for dormitory 1,801 m ² plus 180 m ² of circulation and stairway 10 % = 1,981 m ² , standard design ₦ 3,000/m ² = ₦ 5,943,000			
8.	<u>Housing Unit (4 units)</u>			
8.1	For instructors; 2 bedrooms, 3 w.c., living room, dining room, kitchen, maid room, 1 car garage 4 units @ ₦ 400,000 = ₦ 1,600,000 (including furniture)	4	-	-
9.	<u>Tennis Court</u> 15 cm. concrete, ₦ 300/m ² = ₦ 297,000 ₦ 100/m ² = ₦ 53,600 Total price ₦ 350,600	-	-	990

XV. 普及訓練センター計画

Extension and Training Center Kasetsart University,

1. Introduction

Because we recognize the need to educate the farmers, both big and small, we have already embarked on a training program, using existing University facilities and staff, as it is available. Through this program we have been able to train as many as 5,000 participants in each year.

In addition to training courses for individual farmers in specific fields, we also recognize that, a big step in passing on knowledge to rural Thailand is a program to "train trainers" to teach farmers new techniques as well as to help them solve their problems.

2. Duties and Responsibilities

The Extension and Training Center is one of the faculties of Kasetsart University. Its main function is to serve as the extension arm of the University. Its policy and functions are as follows.

- 2.1 The Extension and Training Center will be in charge of the community extension services of Kasetsart University.
- 2.2 Extension and Training Center will be in charge and make the services of the Educational Communication Media available to the all teaching staff faculties of Kasetsart University and also, cooperate with and coordinate the use of various kinds of educational media in extension services for various governmental agencies.
- 2.3 Extension and Training Center will join other governmental offices in community extension services and activities, especially in conducting in-service training programs in extension and vocational training.
- 2.4 Extension and training staff member will participate in academic program of Kasetsart University.

- 2.5 Extension and Training Center will offer vocational training program to publics and field staff of different governmental agencies. Summer short courses and special program of training are also included.
- 2.6 In order to strengthen the graduate program in Extension Education, research work in extension and research methodology are conducted by staff members of Extension and Training Center.

3. Training Program

The following training programs are offered.

3.1 Vocational Training

- (a) Mushroom culture and cultivation for farmers.
- (b) Summer and special courses.
- (c) Crop and animal productions.
- (d) Special training in agriculture, home economics, food utilization, and cottage industry for house wives of military Personnel, especially for noncommission offices families.

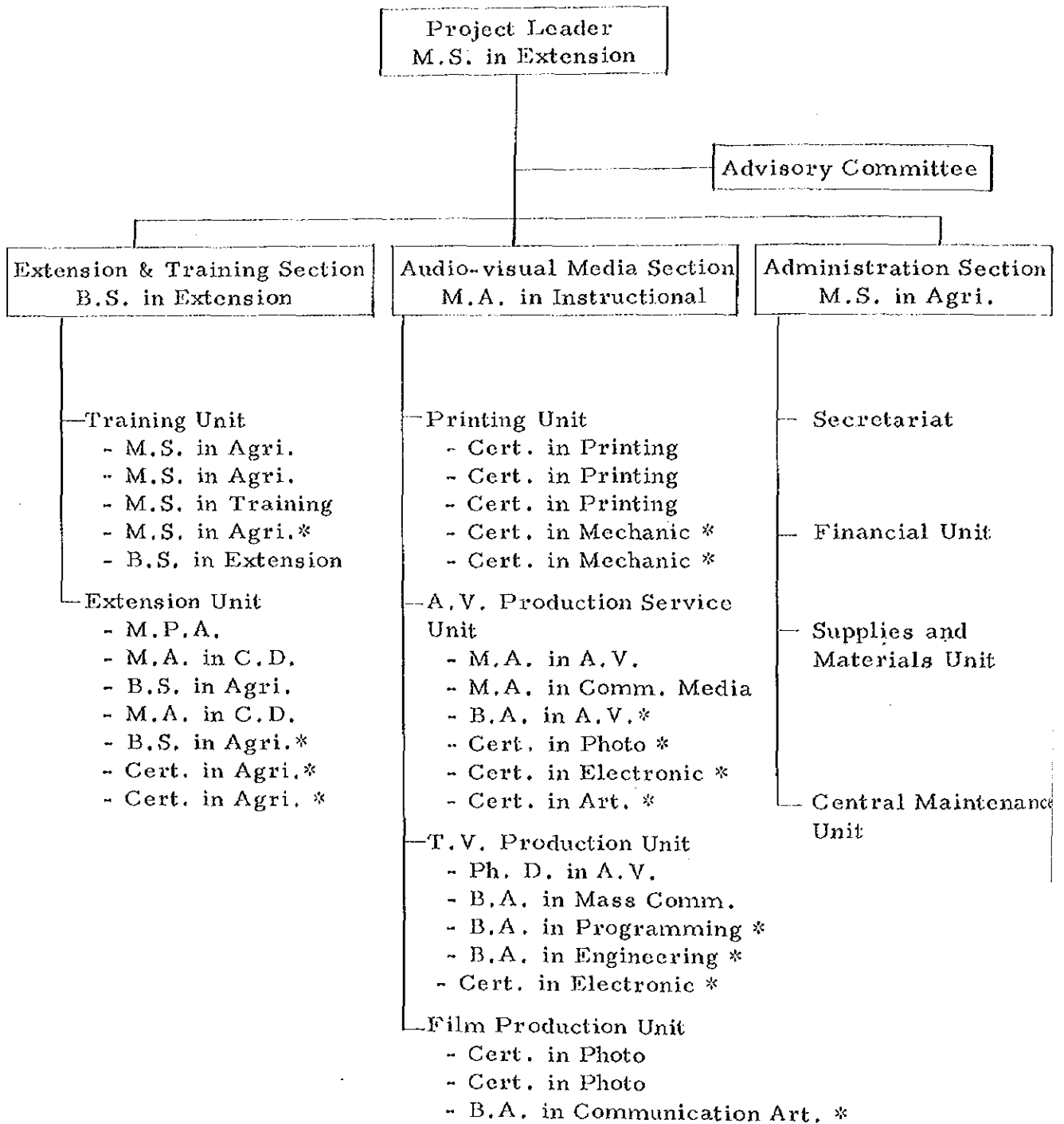
3.2 In service and action training programs

- (a) Extension teaching methods
- (b) Quality control for foreman of agro-industry
- (c) Rodio Farm Broadcasting

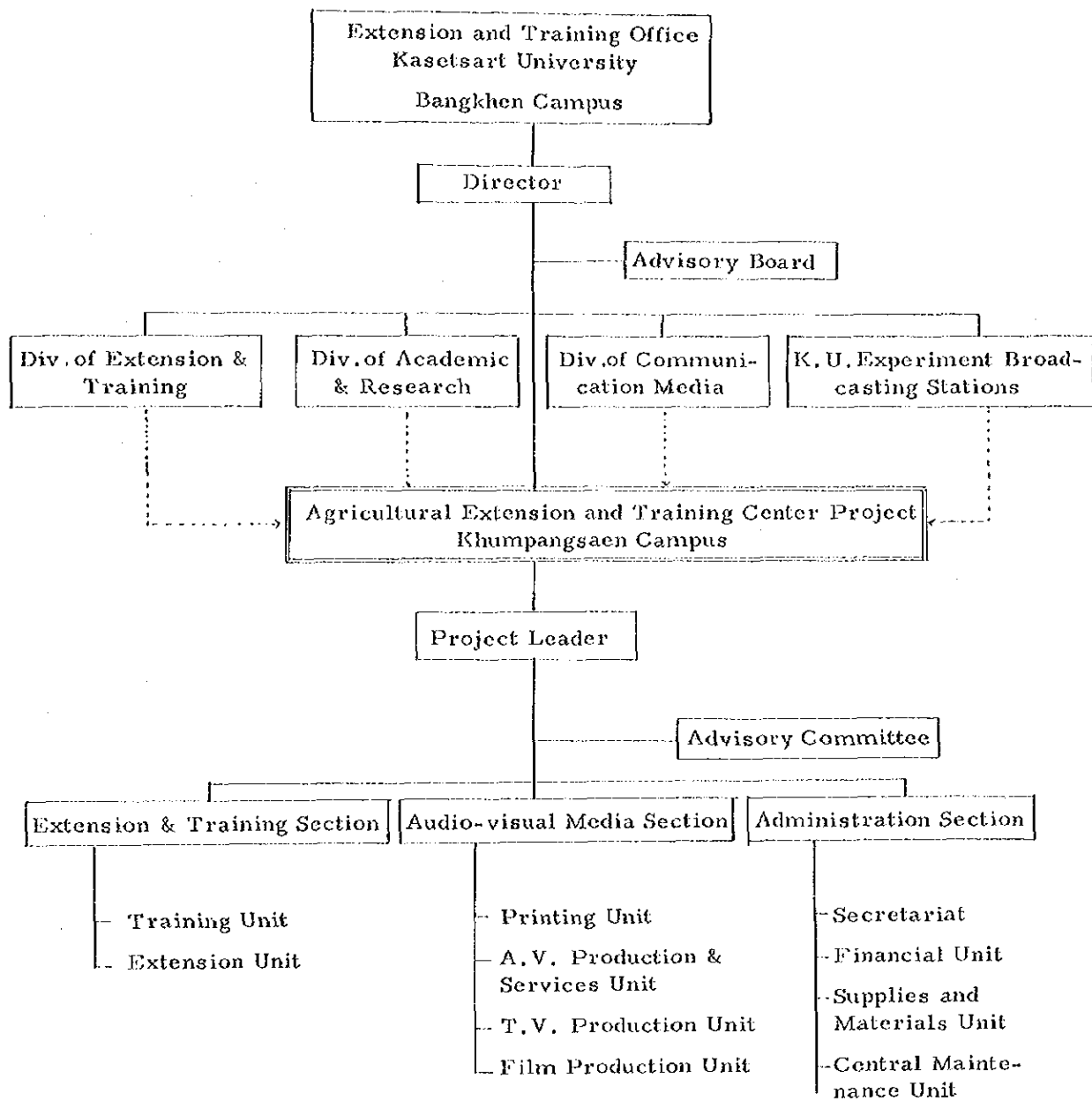
3.3 Also, training programs in Extension, or related fields, will be in the form of joint programs between Kasetsart University and government and / or private agencies concerned.

3.4 On farm training program for key farmers, and farmer training programs, at the University in order to introduce new technology and agricultural inputs for farm families.

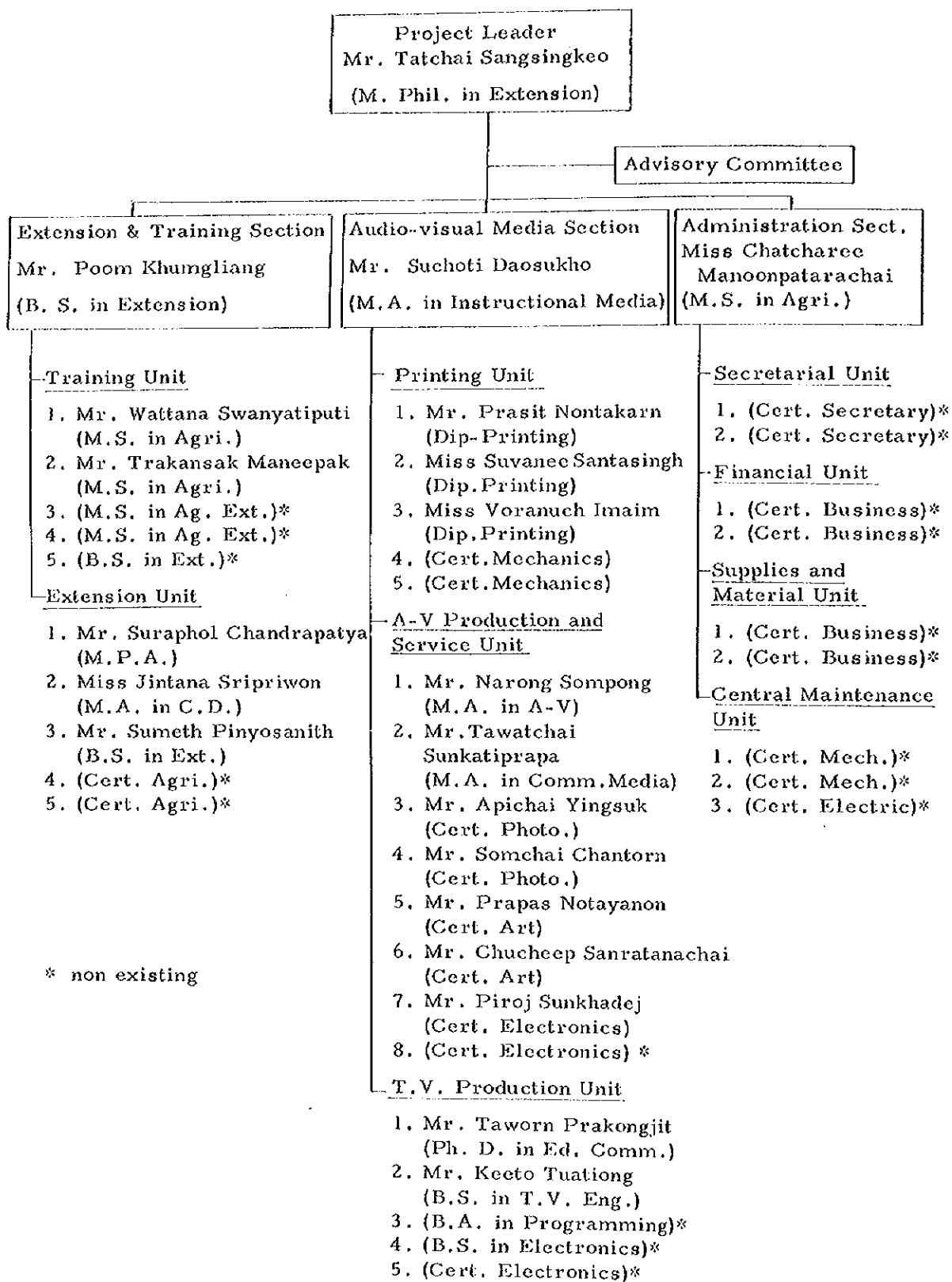
Aricultural Extension and Training Center Project



* Non-existing personnel



Agricultural Extension and Training Center Project



Activities and Personnel

1. Administration Section

1.1	Activities	Frequency
	1. Management and administration	} all year round
	2. Typing and correspondence	
	3. Finance	
	4. Supplies and materials	
	5. Central maintenance service	

1.2	Personnel	Available	To be required	Total
	1. Director	1	-	1
	2. Secretary	-	2	2
	3. Financial Officer	-	2	2
	4. Material Officer	-	2	2
	5. Technician	-	3	3
	6. Worker	-	10	10

2. Extension and Training Section

2.1 Activities at Bangkok Campus

Type		Estimated Number of Participants			
		1977	1978	1979	1980
<u>1. Continuing education service</u>					
1.1	Summer session (April 1-30)	1,219	1,365	1,520	1,596
1.2	Intersemestral session (November 1-30)	-	500	800	900
<u>2. Extension and short training service</u>					
2.1	Spawm production and mushroom culture	2,000	1,800	1,500	1,200
2.2	Swine production, corn and sorghum cultivation, sugar cane cultivation, etc.	3,500	3,920	4,390	4,719
<u>3. Special training service for University's staff</u>					
3.1	Development of Instructional materials	20	50	50	50
3.2	General orientation for new staff	80	50	50	50
3.3	Project management	25	25	25	25
3.4	Principle and procedures in administration	-	20	20	20
3.5	Others	-	50	50	50
Total		6,844	7,780	8,405	8,610

2.2 Activities at Kamphaengsaen Campus

Type	Estimated Number of Participants		
	1979	1980	1981
1. Summer session	250	250	250
2. Training in sugar cane cultivation	200	250	300
3. " mushroom cultivation	250	300	350
4. " corn production	100	150	200
5. " vegetable cultivation	200	250	250
6. " rice production	100	150	150
7. " deciduous fruits	50	50	75
8. " beef cattle	30	50	75
9. " poultry production	50	100	100
10. " swine production	60	90	120
11. " rodent protection	50	50	50
Total	1,340	1,715	1,920

2.3 Personnel

	<u>Available</u>	<u>To be required</u>	<u>Total</u>
1. Training Unit			
1.1 M.S. in Agri.	2	1	3
1.2 M.S. in Training	1	2	3
1.3 B.S. in Extension	1	1	2
2. Extension Unit			
2.1 M.P.A.	1	1	2
2.2 M.A. in C.D.	2	1	3
2.3 B.S. in Agri.	1	2	3
2.4 Cert. in Agri.	-	2	2
Total	8	10	18

Estimation of Training Courses of the Extension and Training Center for Government Officer from Various Department per Year

Organization/Participant	Subject	No.	Total
<u>1. Community Development Dept.</u>			1,445
1.1 Officers	1. Seminar on Improvement of Public Pasture and Water Sources for Agriculture	60	
1.2 Farmers, member of the beef cattle group	2. Public Pasture Management	135	
1.3 Officers	3. Agricultural Extension and Animal Raising	60	
1.4 Officers	4. Cooperatives for Production	60	
1.5 Officers, committee of Cooperatives group	5. Cooperatives for Production	60	
1.6 Officer for Province Development	6. Community Development	200	
1.7 Farmer Leaders	7. Agricultural Development	100	
1.8 Officer for District Development	8. Seminar on Community Development	300	
1.9 Officer for Development in specific area	9. Community Development	200	
1.10 Local Leaders	10. Community Development	120	
1.11 Researcher	11. Seminar on Academic Subjects	50	
1.12 Foreign Officer	12. Seminar on Agricultural problems	100	
<u>2. Urban Re-Construction Office:</u> for Farmer Leaders			1,520
	1. Poultry Production	300	
	2. Cattle Production	200	
	3. Legume Cultivation	200	
	4. Corn & Sorghum Cultivation	200	
	5. Olericulture	50	
	6. Horticulture	50	
	7. Aquaculture	120	
	8. Mushroom Culture	400	
<u>3. Bangkok Metropolitan</u>			564
3.1 Officers	1. Agricultural Extension and Development	64	
3.2 Farmer Leaders	2. Agricultural Extension and Development	500	
<u>4. Office of Army Officer Development</u>			220
4.1 Agricultural Army Officer	1. Principle on Agriculture and specific subjects	60	
	2. Animal Raising	40	
	3. Agronomy	40	
	4. Horticulture	40	
	5. Fishery	40	
	Total		3,749

3. Audio-visual Media Center

3.1 Printing Unit

3.1.1 Activities

Printing work for K. U. 's requirement

Frequency

all year round

3.1.2 Personnel

	<u>Available</u>	<u>To be required</u>	<u>Total</u>
1. Cert. in Printing	3	-	3
2. Cert. in Mechanic	-	2	2
3. Worker	-	3	3

List of Documents and Its Expenses Published in Kasetsart University

1. Office of the Rector

1.1	Cards	5,000 B
1.2	Year Book	85,000
1.3	Leaflets	15,000
1.4	Expenses Receipt	5,000
1.5	Financial Papers	8,000
1.6	Receipts	5,000
1.7	Fee Card	5,400
1.8	Student I.D. Card	4,000
1.9	Personnel Record	5,000
1.10	Academic Conference Reports	5,000
1.11	List of Students	6,000
1.12	Computer Card	60,000
1.13	Degree Card Cover	75,000
1.14	Degree Card	5,000
1.15	Various Receipts	15,000
1.16	Forms	20,000
	Total	323,400

2. Publication Committee

2.1	Laboratory Handbook on General Chemistry	
2.2	Laboratory Handbook on Analytical Chemistry	
2.3	Laboratory Handbook on Biology	
2.4	Laboratory Handbook on Soil Science	
2.5	Laboratory Handbook on Genetics	
2.6	Laboratory Handbook on Plant Pathology	
2.7	Laboratory Handbook on Plant Science	
2.8	Poultry Production	
2.9	Introduction to Psychology	
2.10	Translation Practice	
2.11	Improvement of Genetics	
2.12	Fishery Products and Preservation	
2.13	Rural Sociology	
2.14	Principle on Marine Farming	
2.15	Agricultural	
2.16	Quails	
2.17	History and World Culture	
2.18	Report on Biological Conference	
2.19	Report on Plant Conference	
2.20	Introduction to Political Science	
2.21	Report on Animal Conference	
2.22	Principle on Biology	
2.23	General on Animal Science	
	Total	500,000

3.	<u>World Bank Loan Project</u>		
	3.1	Monthly News	
	3.2	Documents for Construction Design	
	3.3	Forms	
		Total	50,000
4.	<u>Extension and Training Office</u>		
	4.1	Students Handbook	
	4.2	Principle on Agricultural Extension	
	4.3	Agricultural News	
	4.4	Inter-University News	
	4.5	Facts and Figures of Kasetsart University	
	4.6	Extension Documents	
	4.7	Certificate Cards	
	4.8	Certificate Covers	
	4.9	Forms	
		Total	150,000
5.	<u>Institute of Food Research and Product Development</u>		
	5.1	Journal on Food	
	5.2	Year Book	
	5.3	Reports	
	5.4	Forms	
		Total	70,000
6.	<u>The University Library</u>		
	6.1	Librarial Card	
	6.2	Forms	
		Total	40,000
7.	<u>The University Clinic</u>		
	7.1	O.P.D. Card	
	7.2	Medical Order	
	7.3	Medical Package	
	7.4	Patient Card	
	7.5	Medical Recommended Forms	
		Total	30,000
8.	<u>Faculty of Agriculture</u>		
	8.1	Cover for Instructional Documents	
	8.2	Forms	
		Total	10,000

<u>9. Faculty of Fishery</u>			
9.1	Kasetsart University Fishery Research Bulletin		
9.2	Noter from Faculty of Fisheries Kasetsart University		
9.3	Forms		
		Total	25,000
<u>10. Faculty of Forestry</u>			
10.1	Cover for Instructional Documents		
10.2	Forms		
		Total	20,000
<u>11. Faculty of Science and Arts</u>			
11.1	Year Book		
11.2	Forms		
		Total	30,000
<u>12. Faculty of Education</u>			
12.1	Education Data		
12.2	Education News		
12.3	Handbook for Advisor		
12.4	Handbook for Instructor		
12.5	Handbook for Trainee		
12.6	List of Instructors		
12.7	List of Materials		
12.8	List of Personnel		
12.9	List of Students		
		Total	150,000
<u>13. Faculty of Economics and Business Administration</u>			
13.1	Covers for Instructional Documents		
13.2	Forms		
		Total	150,000
<u>14. Faculty of Veterinary Medicine</u>			
14.1	Cover for Instructional Documents		
14.2	Forms		
		Total	10,000
<u>15. Faculty of Social Science</u>			
15.1	Cover for Instructional Documents		
15.2	Forms		
		Total	10,000
<u>16. The Graduate School</u>			
16.1	Handbook for Graduate Students		
16.2	Forms		
		Total	15,000

17. K.U. Demonstration School

17.1	Practice	1,000
17.2	Demonstration School News	1,500
17.3	Laws and Orders	6,750
17.4	News Bulletins	2,500
17.5	Student I.D. Card	1,500
17.6	Student Record Card	1,500
17.7	Educational Results Card	1,000
17.8	Educational Reports Card	2,000
17.9	Educational Record Book	3,500
17.10	Forms	1,500
	Total	22,250

18. Others

18.1	Journal on Horticulture	25,000
18.2	Journal of Orchid Society	100,000
18.3	Orchid Monthly News	12,000
18.4	Swine Magazine	40,000
18.5	Graduate Book	120,000
18.6	New Students Welcome Book	60,000
18.7	Thesis Cover	60,000
	Total	417,000

Grand Total per year 1,737,650

3.2 A.V. Production Service Unit

3.2.1 Activities

Frequency

1. To produce A.V. materials for extension training
2. To operate A.V. equipment for training
3. To prepare A.V. facilities for extension
4. To maintain A.V. equipment for servicing

all year round

3.2.2 Personnel

Available

To be required

Total

1.	M.A. in A.V.	1	-	1
2.	M.A. in Comm. Media	1	-	1
3.	Cert. in Photo	2	-	2
4.	Cert. in Arts	2	-	2
5.	Cert. in Electronics	1	1	2

3.3 T.V. Production Unit

3.3.1 Activities

- | | | |
|---|---|------------------------------------|
| <ol style="list-style-type: none"> 1. To produce VTR cassette for extension and training 2. To operate Close-circuit T.V. for extension and training 3. To prepare VTR cassette servicing for extension and training needs |] | <u>Frequency</u>
all year round |
|---|---|------------------------------------|

3.3.2 Personnel

	<u>Available</u>	<u>To be required</u>	<u>Total</u>
1. Ph. D. in A.V.	1	-	1
2. B.A. in Mass. Comm.	1	-	1
3. B.A. in Programming	-	1	1
4. B.A. in Engineering	-	1	1
5. Cert. in Electronics	-	1	1

XVI スワン学生訓練センターの概要

1. 目的

学生の農業実習、訓練の場として利用するほか、コーン、ソルガムの育種と農家への種子配布および技術指導を目的とする。

2. 所在地

PARKCHONG

3. 農場の耕地面積

2,300ライ (= 368 ha)

4. 農場の経緯と現状

1965年に当時の総理大臣の所有物となっていた土地、建物がカセサート大学(以下、KU)に譲渡される。当初は学生の農業実習のために利用されたが、ロックフェラー基金によって、コーンとソルガムに関する育種研究が行われるようになり、その業務に関連するトラクタと付属作業機が整備される。これら農場としての機能充実にともない、フィリピン、インドネシア、カンボジア、ラオス等東南アジアの関係研究者のための国際的研究センターとして利用されるようになり、そのための宿舎、会議室等の施設が充実される。農業機械等の供給は1965～1970年の間行われたが、1970年以降は打切られており、また、研究スタッフについては、1963～1974年の間は協力があつたが、現在はロックフェラー財団の関心があることについてのみ協力を得ている。次に、上記の国際的活動は1975年まで実施したが、これについても予算不足のために中断しているのが実状である。現在はDTFC等がそれぞれの予算で国内的に利用している。なお、現在、ロックフェラー基金の打ち切りを1年後にひかえ、今後の予算的、人的対策等が問題となっている。

5. 圃場の利用状況

圃場は事務所を中心として、前面に1,400ライ(1ライ=0.16ha)の極めてよく整備された圃場(現在、研究用には300ライ使用)と後面に給水に若干の問題がある900ライの圃場がある。前者は研究圃場として利用しており、100ライの面積に給水可能な貯水池(2ヶ所)を保有している。後者はレベリングが必ずしも十分でなく(観察の範囲では均平であるように認められた)、また給水施設がないために、現在生産圃場として利用している。

6. 研究・業務内容

学生の定期的実習のほか、コーンとソルガムの適正品種の育成と種子の配布を行ってい

る。コーンの種子には「SUWAN-1」等の優良品種が育成され、収量は300～400 kg/ライ(1,875～2,500 kg/ha)であり、天候による影響が大である。農場で生産した種子は、年間250t程度農家に販売しているが、農家の需要を充すには十分でないために、さらに種子生産能力の増大が望まれる。種子の配布方法は、農家が農場に来て直接購入するものであり、種子の価格は5パーツ/kg(=75円/kg)である。このほか、農家に対する技術指導・普及を行っている。なお、育種等に関する研究プランはKUと農務省で作成し、実施はKUで行うことになる。

7. 農場の職員の状況

農業のスタッフは22名であり、いずれもKUに所属しているが、一部の職員が外国留学のために、現在の実員は15名である。研究はDr. スティンが中心となり、KUから適宜来場して、研究・指導に当たっている。

8. 作付・作業の状況

コーンの作業方式は「ブラウ耕(主として水牛による)→ホーによる作溝→手播き……人力による収穫」が多く、作付はピーマン、マンピーン、ソイピーン、サフラン等との組合せ方式がみられるが、輪作方式は農家によって異なり、必ずしも定着していない。

9. 機械の整備状況

現有のトラクタは、30PSが3台、72PSが2台、76PS(4輪駆動)1台(修理中)、作業機はブラウ、デスクハロー、コーンプランタ、コーンピッカー、スプレー(ハイクリヤランス、自走式)等、コーン、ソルガム栽培に要する作業機が整備されている。これらの機械等の中には、圃場、作業内容に必ずしも十分に適応した型式でなく、実際には使用していない機種が散見された。例えば、スプレーは緩傾斜圃場が多いために使用していない。しかし、これらの機械はロックフェラー基金によって整備されたものを中心としており、この内の多くは、既に陳腐化し、更新が必要であると認められる。

10. 指摘のあった問題点

① 大型機械の不足と陳腐化

現在、圃場作業は4名で実施しているが、作業能力が十分でない(とくに、圃場の耕起、整地作業等)、その原因は、トラクタの機能低下と修理頻度の増大によるためである。

② 給水能力の不足

現有の貯水池(底面にビニールを敷き、これを石灰岩で覆う方式、2ヶ所)では給水量が不足するので、さらに給水量を増すために貯水池を築造したい(100m深のボーリングとポンプアップ)。

③ 種子貯蔵庫

現有の種子貯蔵庫は、一応環境制御を行っているが、能力は必ずしも十分でない。また今後、種子の配布機能を高めるために、種子生産量の向上をはかるに当っては、貯蔵庫の容量が不足すると考えられるので、さらに拡張整備する必要がある。

1.4. 所 見

- (1) 農場内の施設は、外部研究者の宿泊が可能であり、かつて国際的研修会をもった実績からして、今後、単に地域的利用にとどまらない研修の場としての利用が望まれ、そのための施設・機械・圃場等の整備が必要である。
- (2) 地域の農業振興のためには、優良種子の十分、かつ計画的配布が不可欠の条件であるがそのためには、現有の施設・圃場条件は十分でない。したがって、貯水池の築造を含めたこれらの条件整備をはかる必要がある。
- (3) 現有機械の多くはかなり陳腐化し、また、現状にそぐわない機種がみられる。したがって、作業内容に適応した一貫した作業方式を前提として、トラクタ及び付属作業機の整備をはかる必要がある。これについては、KU施設整備計画における農業機械・訓練センターとの関連をもちつつ整備計画をたてることが望ましい。
- (4) 農場所有の機械の整備は農場自体で実施しているが、整備・修理に関する技術水準は極めて高いと推察される。したがって、機械整備に関する装置・施設等の整備によって、今後、機械の維持管理能力が高まり、機械利用効率の向上が期待できる。
- (5) 地域農業の技術水準は、作付体系の実態から推察するに必ずしも高くないと考えられる。したがって、輪作体系、病虫害防除、作業方式を含めた農業技術の普及機能をよりいっそう高めることが必要である。この場合、総合的技術の指導能力が農場に備わっているか疑問であることから、そのための対策を考慮する必要がある。

タックワン農場の概要

1. 目 的

やさい、果実等の地域適品種の育成・選定と、主として園芸、果樹を中心とした農業技術の普及を目的とする。

2. 所在地

TAKKWANG

3. 農場の耕地面積

370 ライ

4. 農場の現状

当地域は降雨量が少く(900~1,100mm/年、このうち、10月に300mmが集中する)、このような気象条件に適した各作物別の適品種を現在選定中である。但し、農場自体は水に比較的恵まれた地形となっている。

農場では、年間200~300人の学生が研修を受けるほか、農家に対して直接技術指導を行っている。

現在育成中の作物は、大根、白菜、ピーナツ、カウピー、キャベツ、カリフラワー、ナス、ロイナー、マンゴ、ロンガン、リッチー、アボガド、カシュナツ等であり、この内カシュナツは適性が極めて高く、普及が有望と考えられる。

5. 周辺農家の実態

農家の1戸当り耕作面積は10ライである。やさいが換金作物として多く作付され、収入は1万バーツ/ライである。この内、キャベツの換金性が優れ、かつてはラオスに輸出した実績がある。収穫は年3回行っている。近年、当地域のやさい作面積は50%程度増加し、大部分をコラートの市場に出荷している。

6. 指摘のあった問題点





圃場への給水は、現在ポンプアップして行っているが、全圃場の1/4の面積が給水量が不足している。その理由は、散水機の能力が不足しているために、一時期に集中して散水する場合、時間的に給水が困難となるためである。また、農場全体として農業機械が不足しており、適期作業が困難である。

7. 所 見

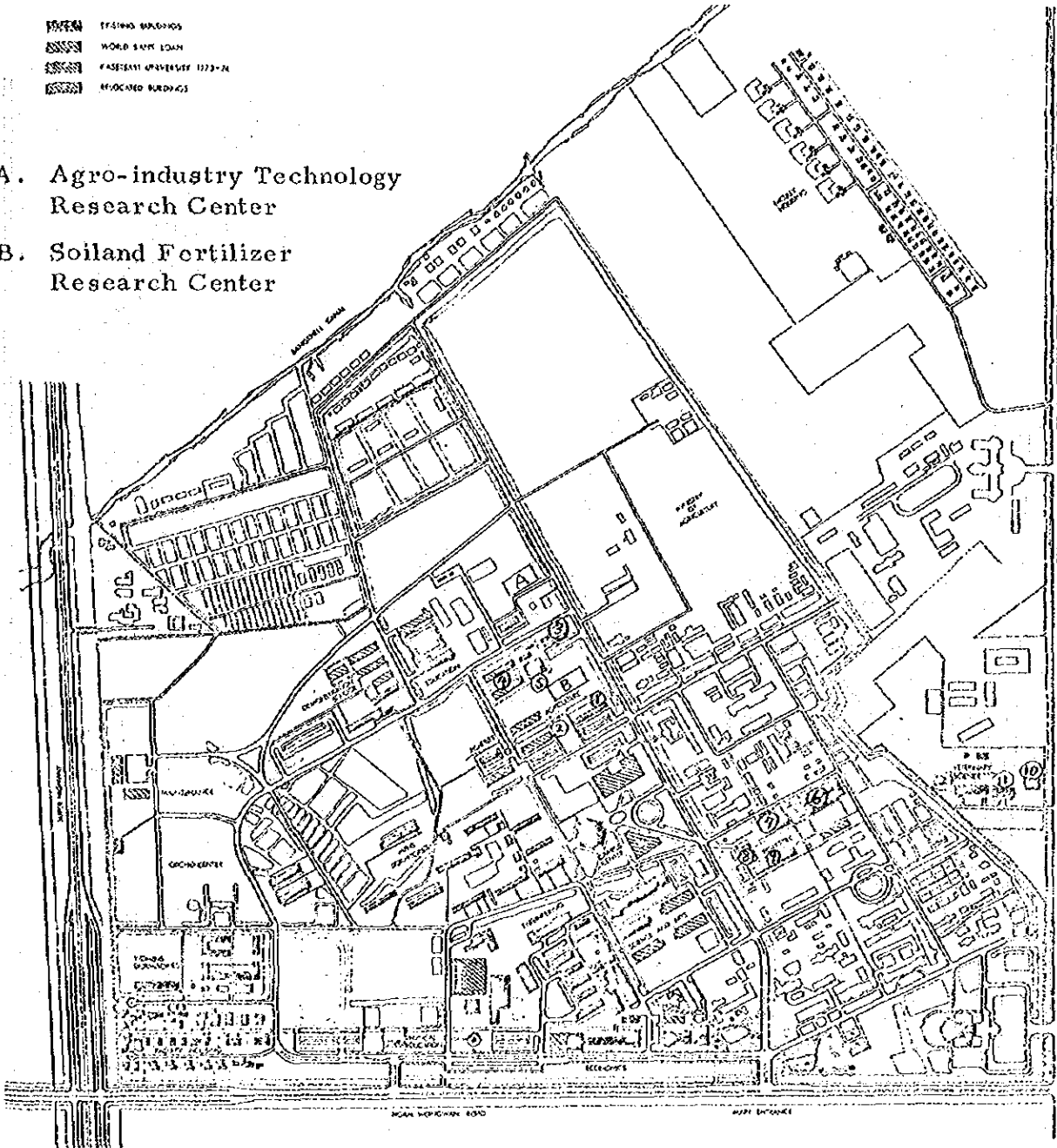
(1) 過去に優良品種の育成を行った実績からみて、今後の成果が期待できるが、そのためには、散水機、トラクタ等を含む作業手段の整備による適期作業体制を早急に確立する必要がある。


(2) 地域の農家を対象として、農業技術の普及・指導を行っているが、農家の立場に立つと個別技術の指導だけでなく、作付体系を含めた総合的技術の普及、指導を行う必要があり、農場の機能がこれに適合しているか疑問である。したがって、この機能を農場が今後保有するか、あるいは、新たな普及・指導の機関を整備するか等の検討の余地がある。

XVII. バンケンキャンパス

-  EXISTING BUILDINGS
-  WORLD BANK LOAN
-  FASESTI UNIVERSITY 1973-74
-  PROPOSED BUILDINGS

- A. Agro-industry Technology Research Center
- B. Soiland Fertilizer Research Center



CAMPUS MASTER PLAN BANGKOK INITIAL PHASE  0 20 40 60

Faculty of Agriculture





1. Dept. of Soil Science
2. Dean's Office, Dept. of Horticulture, Dept. of Farm Mechanic
3. Dept. of Agronomy
4. Workshop of the Dept. of Farm Mechanic
5. Greenhouse of the Dept. of Agronomy

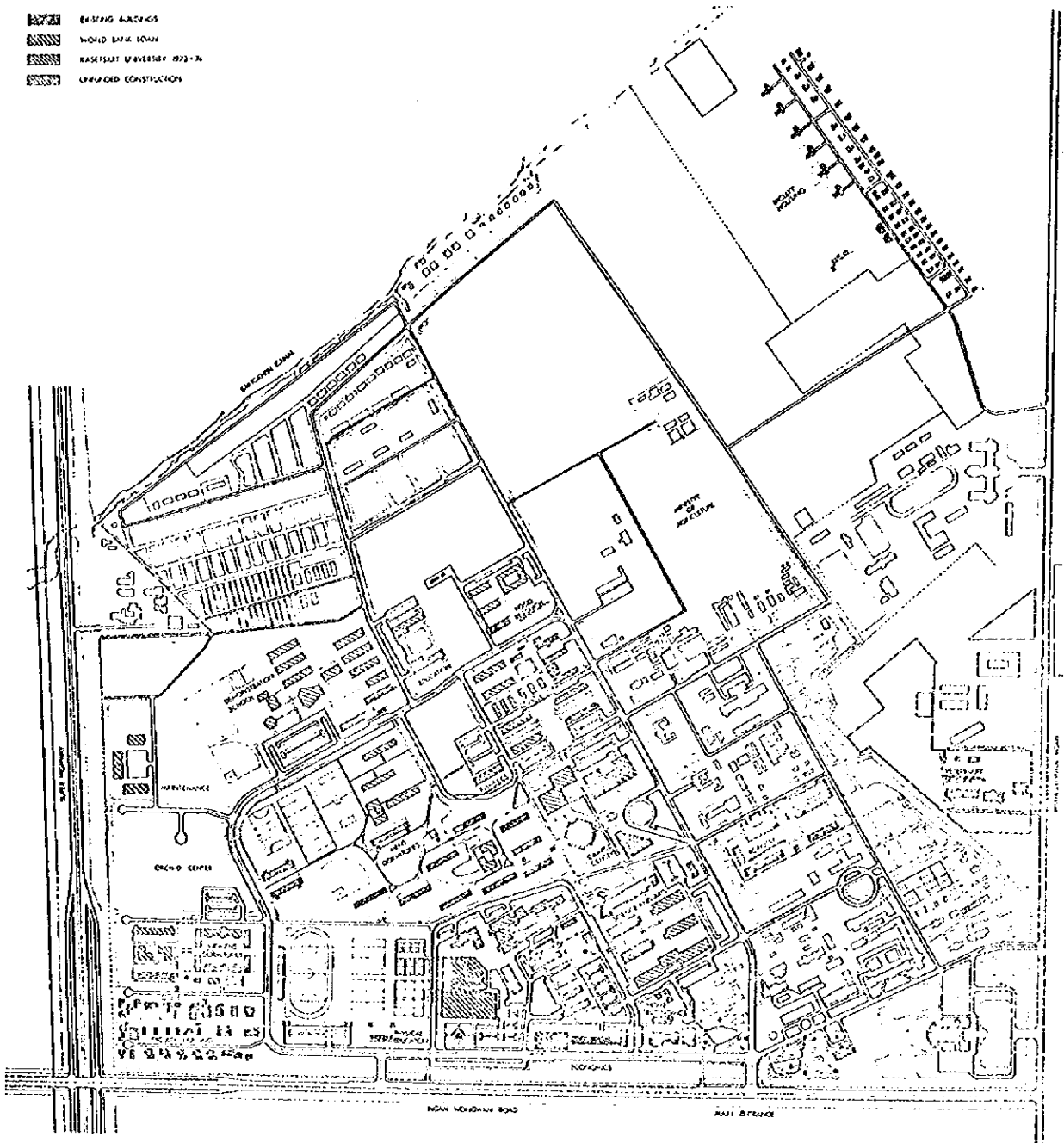
Faculty of Forestry

6. Dept. of Wood Technology
7. Dean's Office, Dept. of Forest Biology
8. Dept. of Forest Conservation, Dept. of Seliculture
9. Dept. of Forest Engineering

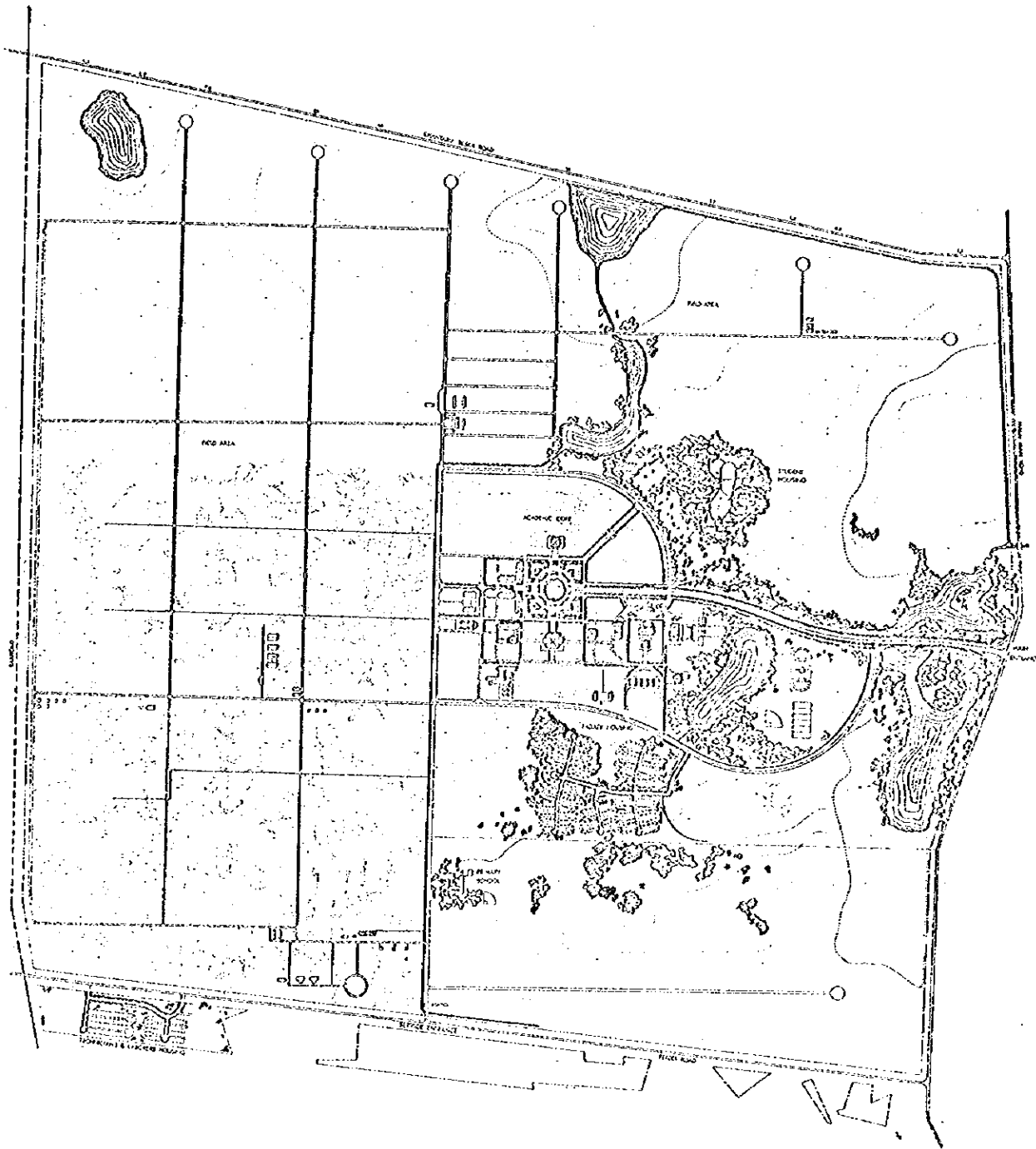
Faculty of Veterinary Science

10. Pool
11. Animal Clinic
12. All Departments

-  EXISTING BUILDINGS
-  WORLD DATA CENTER
-  KASETKASIT UNIVERSITY 1973-76
-  UNPHASED CONSTRUCTION



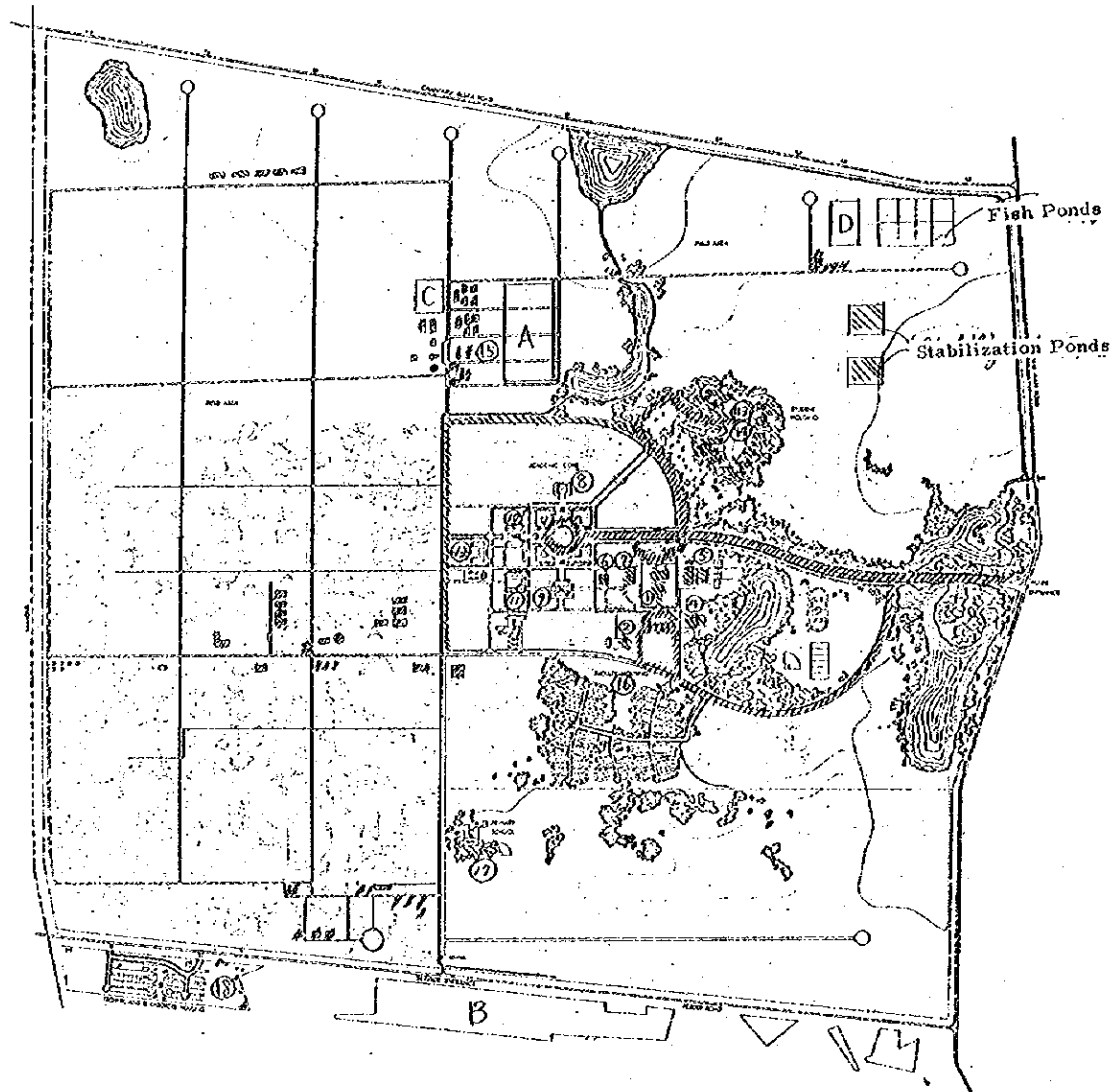
XVIII. カンパセン キャンパス



CAMPUS MASTER PLAN KAMPHAENGAEN INITIAL PHASE

建設進捗状況

- A. Central Laboratory and Greenhouse Complex
- B. National Agricultural Extension and Training Service Center
- C. Agricultural Machinery and Equipment Center
- D. Fresh-Water Fisheries Research Center



CAMPUS MASTER PLAN KAMPHIANGSAEN

11 25.2.72

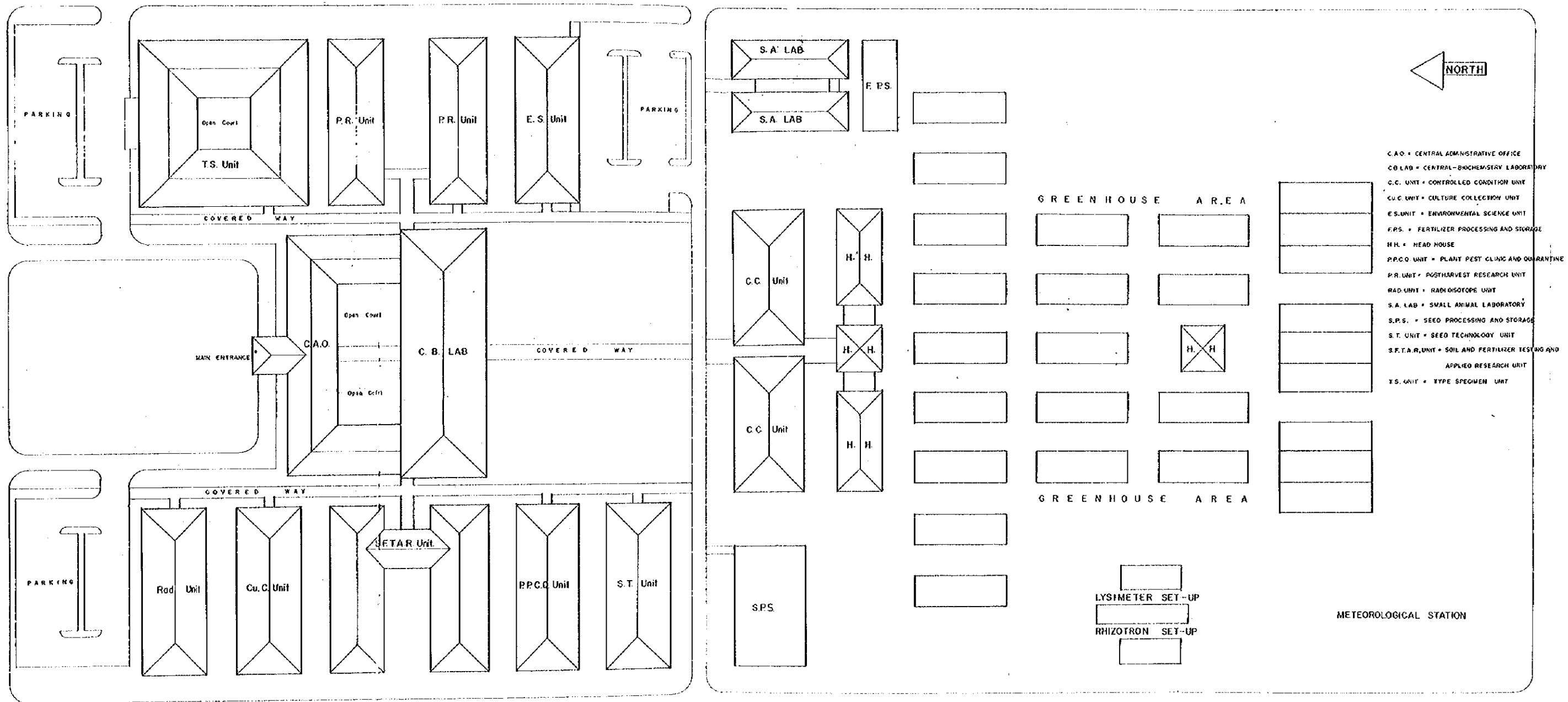
- ////// 建設終了
- ////// 建設中

- | | |
|----------------------------------|---|
| 1 Administration Build. | 11 Faculty of Veterinary Science Build. |
| 2 Maintenance | 12 Faculty of Engineering Build. |
| 3 Health Center | 13 Dormitories (16) |
| 4 Faculty Club | 14 Dormitory Dining Hall |
| 5 General Hall | 15 Farm and Research Build. (52) |
| 6 Central Dining Hall | 16 Staff Housing |
| 7 University Center | 17 Primary School |
| 8 Central Library | 18 Farm Station Housing |
| 9 Central Lecture Build. | |
| 10 Faculty of Agriculture Build. | |



CAMPUS MASTER PLAN KAMPHAENSAEN ULTIMATE PHASE  2022-2025

XIX 普及訓練センターのレイアウト

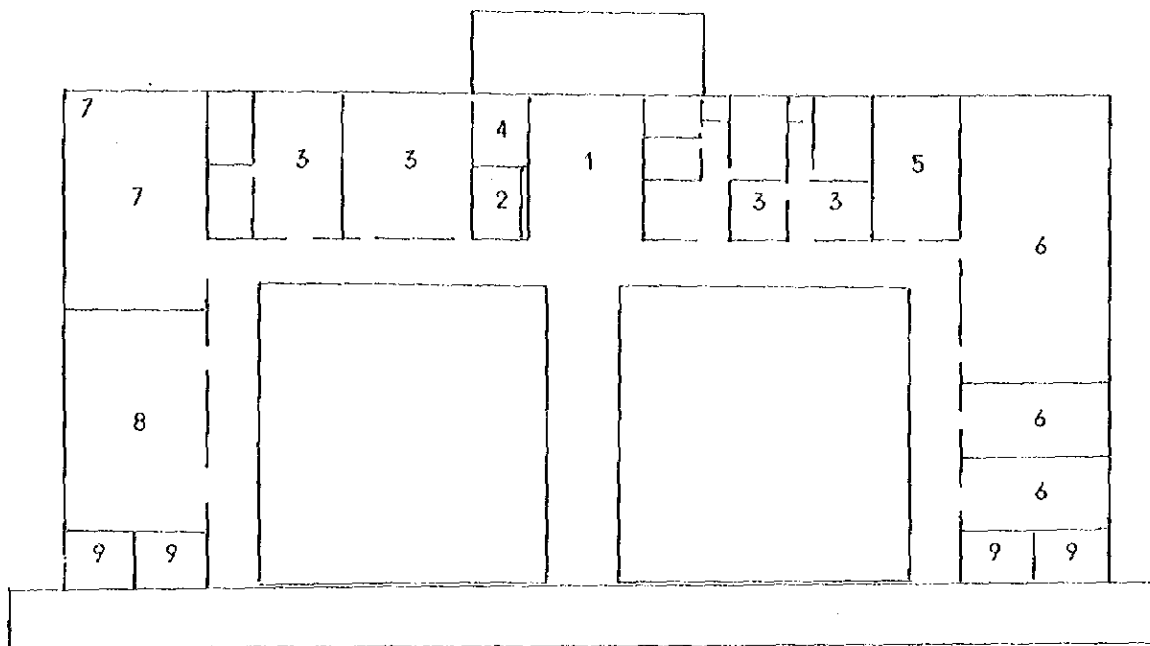


KASETSART UNIVERSITY, THAILAND.

TENTATIVE LAY-OUT OF THE CENTRAL LABORATORY AND GREENHOUSE COMPLEX

LAY-OUT PLAN 1:600

XX. Complex の各 Unit レイアウト

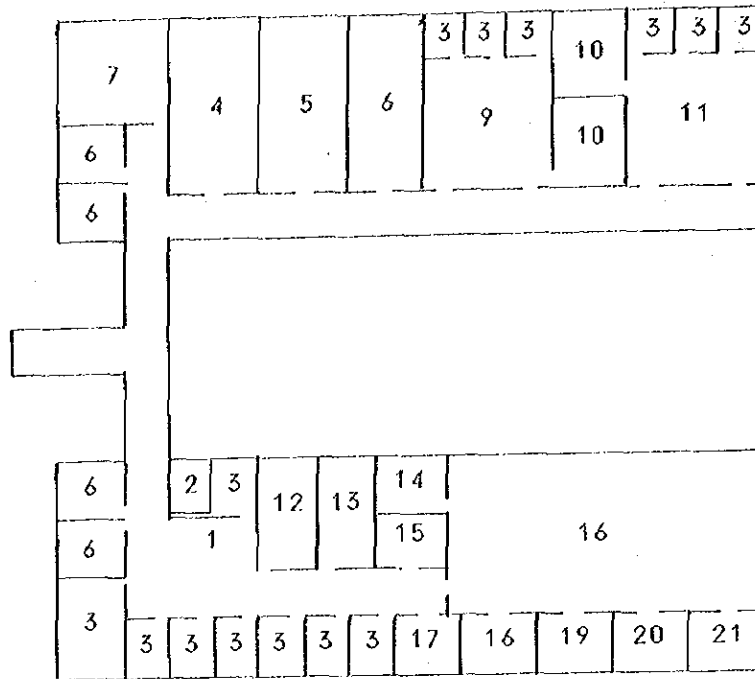


Composition of the unit and area requirement:

1. Lobby	80 m ²
2. Enquiry	20 m ²
3. Office	340 m ²
4. Storage	20 m ²
5. Living Room	60 m ²
6. Meeting Room	300 m ²
7. Library	150 m ²
8. Data processing & Data Bank	150 m ²
9. W.C.	80 m ²

Total area 1,200 m²

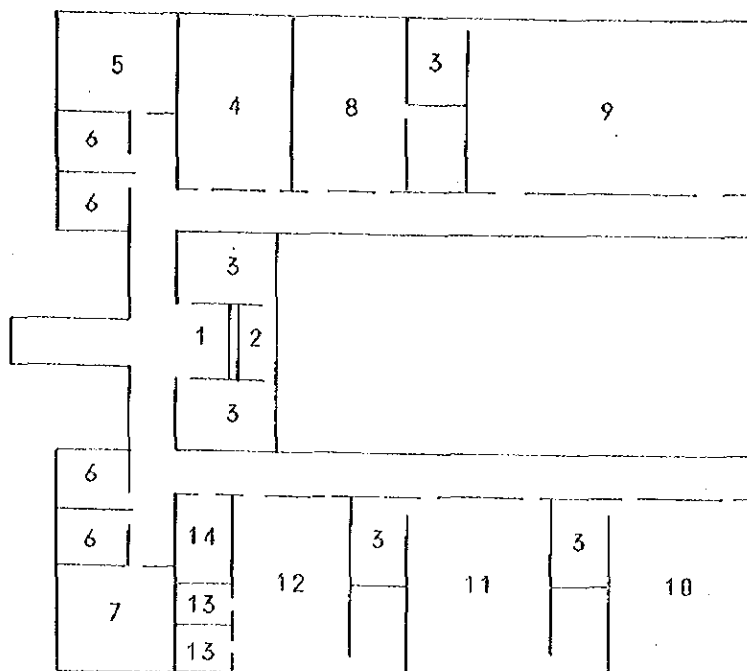
Figure 1.4 Floor plan and breakdown of total floor area requirement of the Central Administrative Office of the Central Laboratory and Greenhouse Complex.



Composition of the unit and area requirement:

1. Lobby	24 m ²
2. Enquiry	12 m ²
3. Office	161 m ²
4. Conference	72 m ²
5. Reading Room	72 m ²
6. W.C.	80 m ²
7. Living Room	56 m ²
8. Data Processing & Storage	60 m ²
9. Physical Analysis & Soil Structure & Water Management Lab.	81 m ²
10. Specialized Equipment	60 m ²
11. Fertilizer Analysis & Soil Fertility Management Lab.	81 m ²
12. Sample Handling & Preparation	32 m ²
13. Sample Storage	32 m ²
14. Chemical Storage	20 m ²
15. Glassware & Other Supply	20 m ²
16. Chemical Analysis Lab.	231 m ²
17. Balance	16 m ²
18. Atomic Absorption Spectrophotometer	20 m ²
19. Flame Photometer & Colorimeter	20 m ²
20. Muffle Furnace & Oven	20 m ²
21. Kjeldahl Digesting Set	20 m ²
22. Corridor	279 m ²
Total Area	<u>1,469 m²</u>

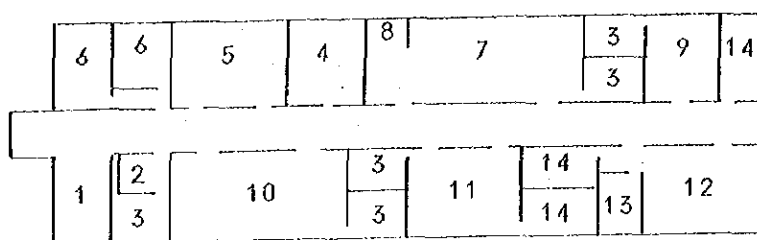
Figure 1.5 Floor plan and breakdown of total floor area requirement of the Soil and Fertilizer Testing and Applied Research Unit of the Central Laboratory and Greenhouse Complex.



Composition of the unit and area requirement:

1. Lobby	20 m ²
2. Enquiry	15 m ²
3. Office	214 m ²
4. Conference Room	96 m ²
5. Library	56 m ²
6. W.C.	80 m ²
7. Living Room	56 m ²
8. Quality Testing Lab.	96 m ²
9. Pilot Packing House	240 m ²
10. Plant Pest Lab.	120 m ²
11. Physiology Lab.	120 m ²
12. Enzyme Lab.	96 m ²
13. Cold Room	24 m ²
14. Storage	24 m ²
15. Corridor	348 m ²
Total Area	<u>1,605 m²</u>

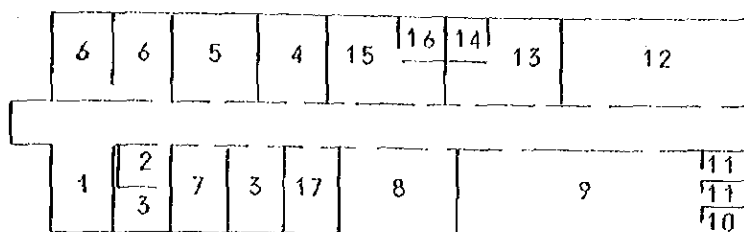
Figure 1.6 Floor plan and breakdown of total floor area requirement of the Postharvest Research Unit of the Central Laboratory and Greenhouse Complex.



Composition of the unit and area requirement:

1. Lobby	24 m ²
2. Enquiry	12 m ²
3. Office	60 m ²
4. Conference	60 m ²
5. Display	48 m ²
6. W.C.	48 m ²
7. Plant Pathology Excluding Nematology Lab.	84 m ²
8. Transfer Room	6 m ²
9. Nematology Lab.	30 m ²
10. Entomology Lab.	72 m ²
11. Preparation Room	48 m ²
12. Quarantine Lab.	54 m ²
13. Fumigation Lab.	12 m ²
14. Storage	48 m ²
15. Corridor	<u>144 m²</u>
Total Area	<u><u>720 m²</u></u>

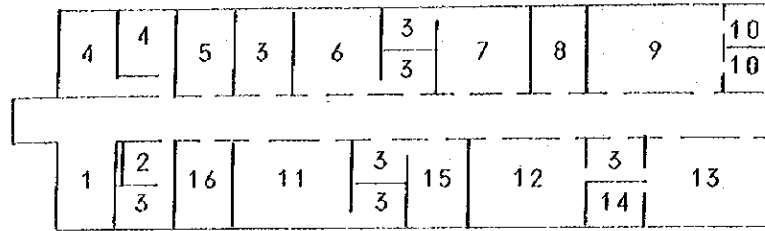
Figure 1.7 Floor plan and breakdown of total floor area requirement of the Plant Pest Clinic and Quarantine Unit of the Central Laboratory and Greenhouse Complex.



Composition of the unit and area requirement:

1. Lobby	24 m ²
2. Enquiry	12 m ²
3. Office	36 m ²
4. Conference & Reading Room	30 m ²
5. Seed Collection & Display	36 m ²
6. W.C.	48 m ²
7. Sample Registration and Analysis	24 m ²
8. Prity Lab.	48 m ²
9. Germination Testing Lab.	102 m ²
10. Cold Room	6 m ²
11. Incubator Room	12 m ²
12. Seed Physiology Lab.	78 m ²
13. Biological Testing Lab.	39 m ²
14. Transfer Room	9 m ²
15. Sampling & Moisture Testing Room	39 m ²
16. Weight Room	9 m ²
17. Storage	24 m ²
18. Corridor	<u>144 m²</u>
Total Area	<u><u>720 m²</u></u>

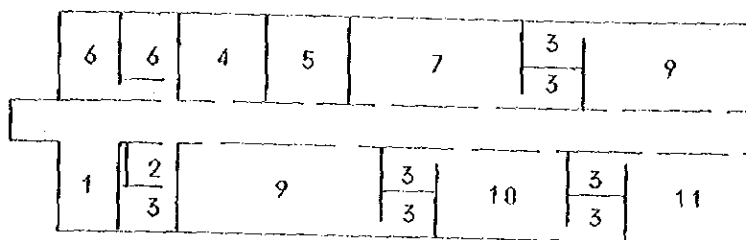
Figure. 1.8 Floor plan and breakdown of total floor area requirement of the Seed Testing Laboratory of the Central Laboratory and Greenhouse Complex.



Composition of the unit and area requirement:

1. Lobby	24 m ²
2. Enquiry	12 m ²
3. Office	96 m ²
4. W.C.	48 m ²
5. Mycoplasma Lab.	24 m ²
6. Virus Lab.	36 m ²
7. Bacteria Lab.	36 m ²
8. Preparation Room	24 m ²
9. General Equipment & Culture Collection	54 m ²
10. Cold Room	18 m ²
11. Fungus Lab.	48 m ²
12. Infectious Microorganism Lab. I	48 m ²
13. Infectious Microorganism Lab. II	48 m ²
14. Transfer Room	12 m ²
15. Storage	24 m ²
16. Conference & Reading Room	24 m ²
17. Corridor	144 m ²
Total Area	<u>720 m²</u>

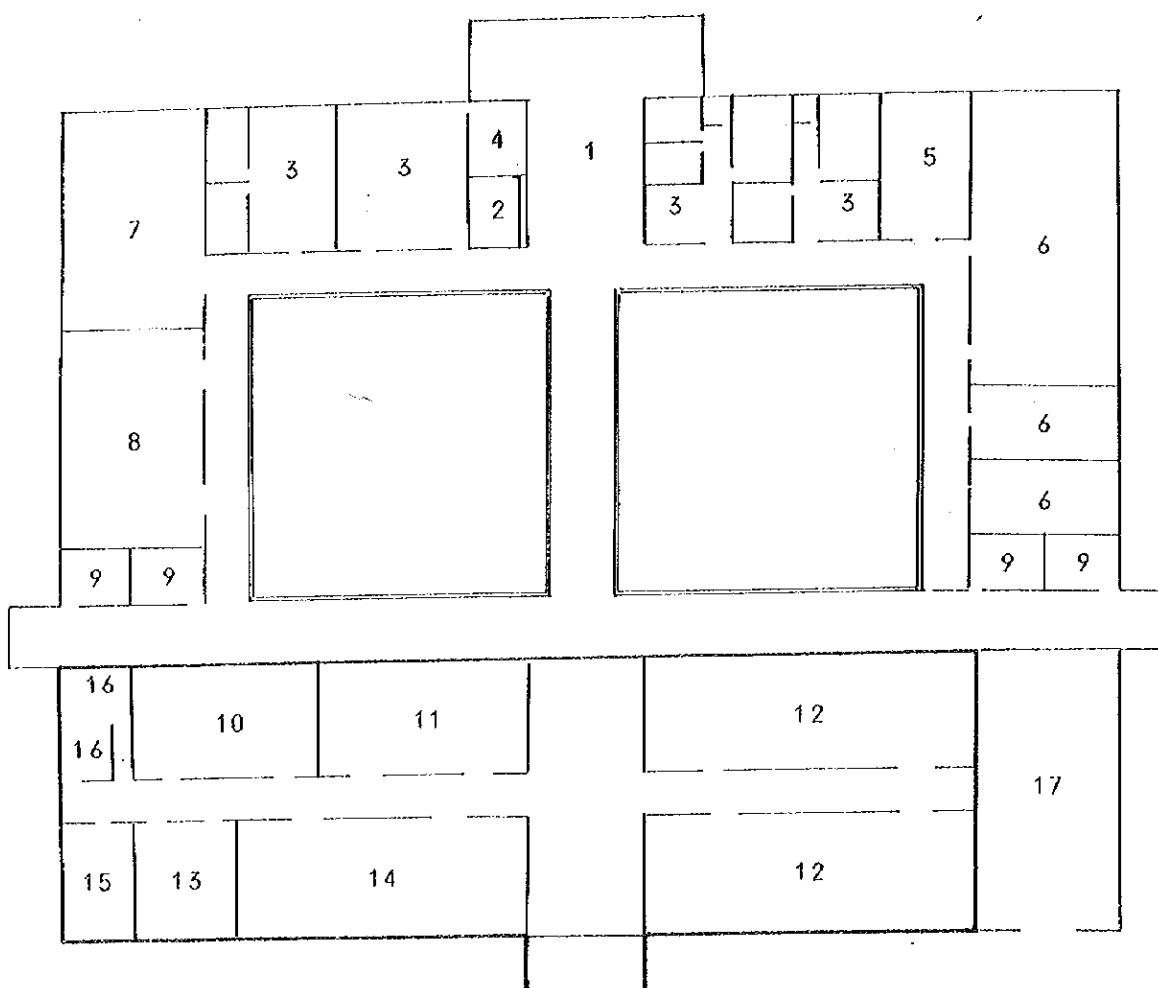
Figure 1.9 Floor plan and breakdown of total floor are requirement of the Culture Collection Unit of the Central Laboratory and Greenhouse Complex.



Composition of the unit and area requirement:

1. Lobby	24 m ²
2. Enquiry	12 m ²
3. Office	84 m ²
4. Conference	36 m ²
5. Library	36 m ²
6. W.C.	48 m ²
7. Water Pollution Lab.	72 m ²
8. Soil Pollution Lab.	72 m ²
9. Agrochemical Pollution Lab.	84 m ²
10. Air Pollution Lab.	54 m ²
11. Noise Pollution Lab.	54 m ²
12. Corridor	144 m ²
Total Area	<u>720 m²</u>

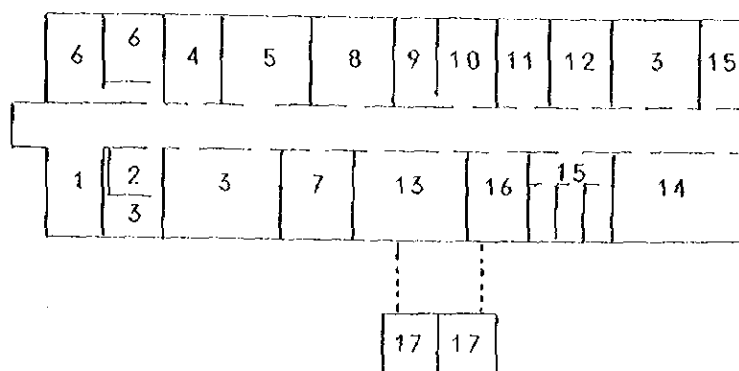
Figure 1.10 Floor plan and breakdown of total floor area requirement of the Environment Science Unit of the Central Laboratory and Greenhouse Complex.



Composition of the unit and area requirement:

10. Photography Lab.	104 m ²
11. Microscope Lab.	112 m ²
12. Central Lab.	352 m ²
13. Art Studio	56 m ²
14. General Preparation Lab.	160 m ²
15. Storage	40 m ²
16. W.C.	40 m ²
	<hr/>
Total area	<u>864 m²</u>

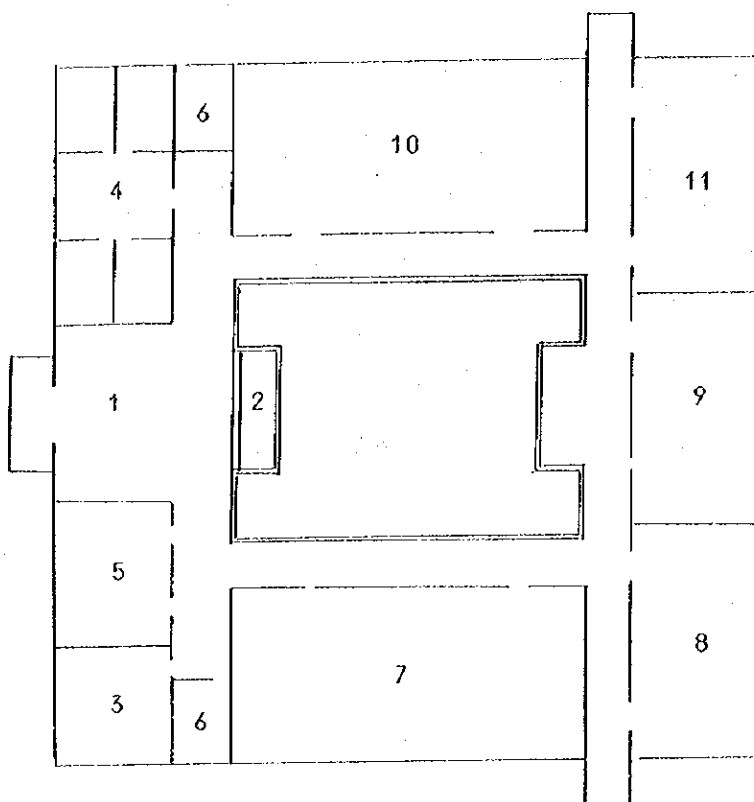
Figure 1.11 Floor plan and breakdown of total floor area requirement of the Central Biochemistry Unit of the Central Laboratory and Greenhouse Complex.



Composition of the unit and area requirement:

1. Lobby	24 m ²
2. Enquiry	12 m ²
3. Office	96 m ²
4. Reference Room	24 m ²
5. Discussion Room	36 m ²
6. W.C.	48 m ²
7. Washing & Toilet	30 m ²
8. Counting Room	36 m ²
9. Dark Room	18 m ²
10. Chemical Mutagenesis Lab.	24 m ²
11. Cytogenetic Lab.	24 m ²
12. Preparation Room	24 m ²
13. Low Pressure Area Lab.	48 m ²
14. X-Ray Room	54 m ²
15. Storage Room	54 m ²
16. Waste Disposal Room	24 m ²
17. Waste Hold up Tank	32 m ²
18. Corridor	144 m ²
Total Area	<u>752 m²</u>

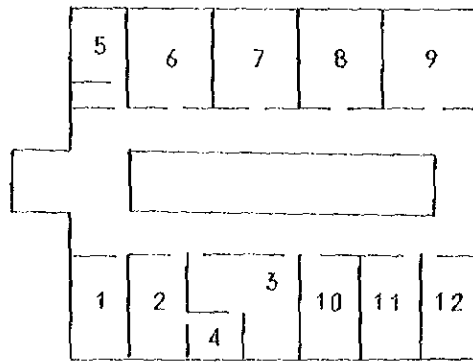
Figure 1.12 Floor plan and breakdown of total floor area requirement of the Radioisotope Unit of the Central Laboratory and Greenhouse Complex.



Composition of the unit and area requirement:

1. Lobby	96 m ²
2. Enquiry	24 m ²
3. Office	64 m ²
4. Laboratory & Working area	144 m ²
5. Hall	80 m ²
6. W.C.	48 m ²
7. Animal Museum	288 m ²
8. Animal Specimen Collection	144 m ²
9. Soil Museum	144 m ²
10. Plants Museum	288 m ²
11. Plants Specimen Collection	144 m ²
12. Corridor	498 m ²
Total Area	<u>1,962 m²</u>

Figure 1.13 Floor plan and breakdown of total floor area requirement of the Type Specimen Unit of the Central Laboratory and Greenhouse Complex.



Composition of the unit and area requirement:

1. Enquiry	28 m ²
2. Office	28 m ²
3. Laboratory	44 m ²
4. Storage	12 m ²
5. Wash Room & W.C.	28 m ²
6. Experimental Rabbit I	42 m ²
7. Experimental Rabbit II	42 m ²
8. Experimental Rat	42 m ²
9. Experimental Mice	42 m ²
10. Breeder Rabbit	28 m ²
11. Breeder Rat	28 m ²
12. Breeder Mice	28 m ²
13. Corridor	146 m ²
	<hr/>
Total Area	538 m ²

Figure. 1.14 Floor plan and breakdown of total floor area requirement of the Small Animal Laboratory of the Central Laboratory and Greenhouse Complex.

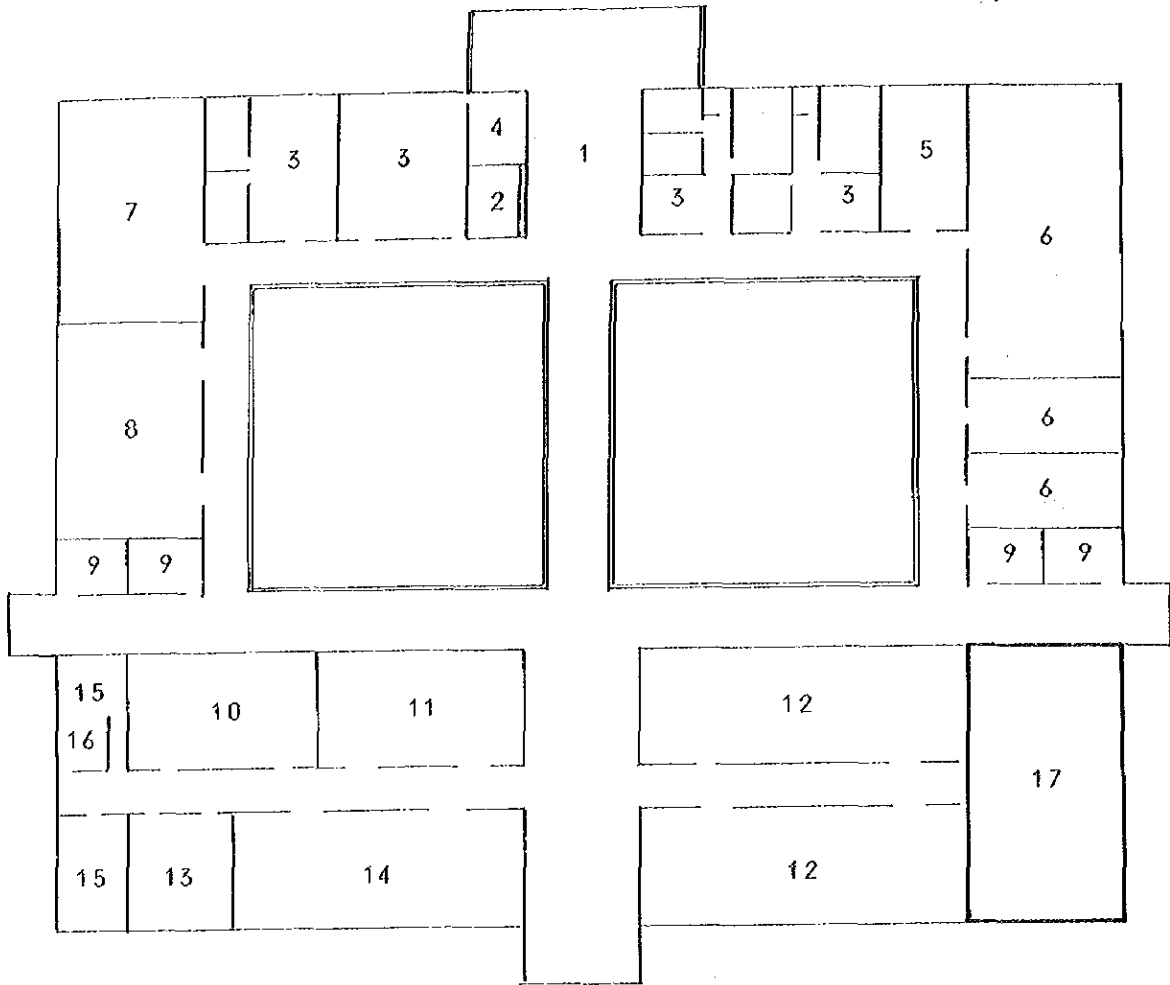
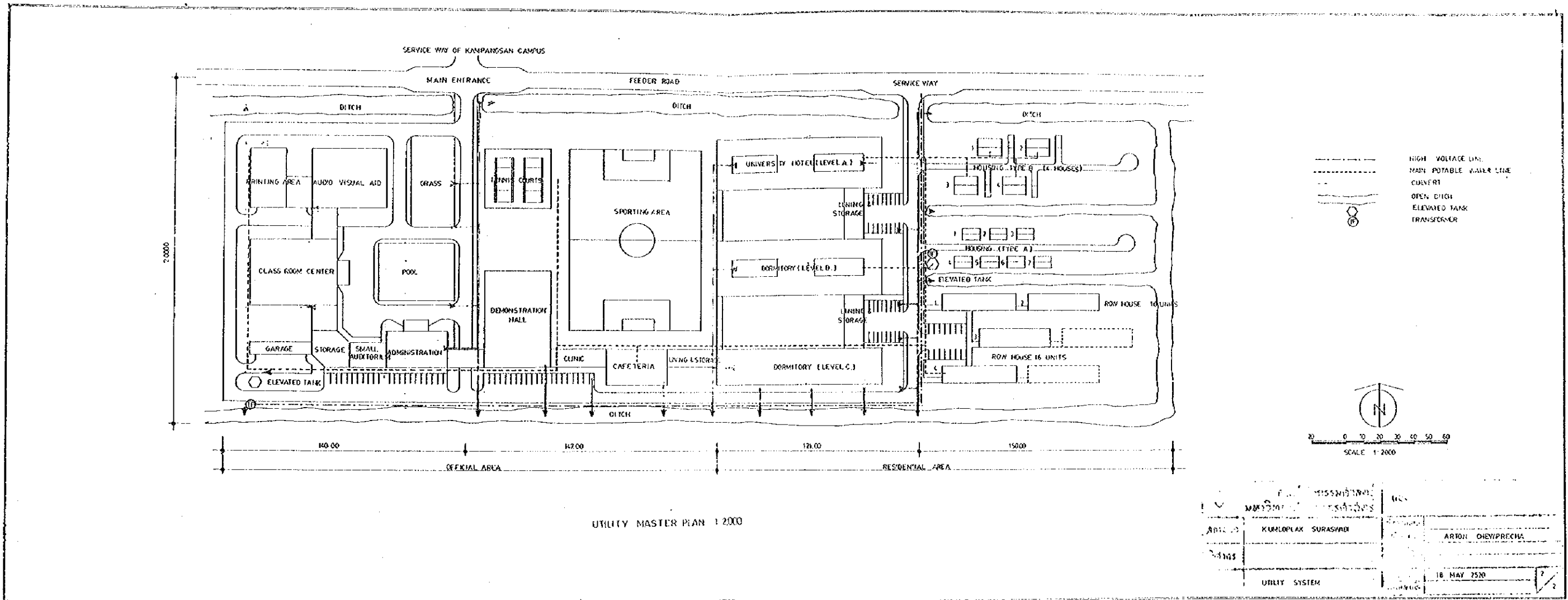


Figure 1.15 Floor plan of the Laboratory Maintenance Unit.

An area requirement of this unit is 190 square meters.

XI Central Laboratory and Greenhouse Complex のレイアウト



XXII 建築物リスト

表-1 バンゲン・キャンパスにおける施設の現況

区分	番号	建築物名	建物の機能	収容能力 (人)	単位当り (㎡/人)	面積 (㎡)	備考
1. 中央事務局 (学長事務局) Central Administration (Rector's office)	1	学生事務局 (STUDENT ADMINISTRATION)	事務所	-	-	(55666)	
	2	SUWAN記念館 (SUWAN Bldg)	記録と保存	-	-	485	
	3	タイ音楽ホール (THAI MUSIC HALL)	音楽	-	-	675	
	4	講義センター (LECTURE CENTER)	講義	2,000	1.1(class)	6,156	
	5	集会堂 (ASSEMBLY HALL Bldg)	集会	(auditorium) 900	-	5,093	集会室、学芸事務局 卒業生事務局
	6	図書館 (LIBRARY)	図書室	-	-	1,550	
	7	診療所 (INFIRMARY)		-	-	273	
	8	食堂 (DHEBASART)	食堂	-	-	1,000	とりにわされ、新しい建物
	9	食堂 (CAFETERIA)	"	300	-	600	(2000㎡)が建築中
	10	売店 (FOOD SHOP)	売店	800	-	1,500	
	11	中央管理棟 (CENTRALMAINTENANCE)	保存、サービス	-	-	1,000	
	12	男子学生寮 (MEN'S DORMITORIES)	生活	2,400	11.87	26,488	11棟
	13	女子 " (WOMEN'S DORMITORIES)	"	800	11.87	9,496	8棟
	14	(OTHERS)				1,000	ゲーム室、音楽 etc
2. 農学部 Faculty of Agriculture	1	中央棟 (MAIN Bldg)	事務室、実験室、学級	400	09(class)	(16256)	学芸事務局を含む
	2	土壌学棟 (SOIL Bldg)	"	200	09(class)	4,652	{ 図書、農場機械
	3	農学棟 (AGRONOMY)	事務			5928	
	4	緑化作業場 (BLACKSMITH SHOP)	作業場	50	7.5	300	
					484		

区 分	番号	建 物 名	建 物 の 機 能	収 容 能 力 (人)	単 位 当 り (㎡/人)	面 積 (㎡)	備 考	
	5	機械作業場 (MACHINE SHOP)	作業場	50	7.5	484		
	6	食物科学実験棟 (FOOD SCIENCE LAB. 1)	実験室	50	5	500		
	7	" ok (FOOD SCIENCE LAB. 2)	"	50	5	500		
	8	家庭学棟 (HOME ECONOMICS)	事務、実験室、学級	120	4 (lab)	1,270		
	9	園芸学棟 (HORTI CULTURE)	事務、研究室		5 (lab)	300		
	10	動物学棟 (ANIMAL SCIENCE)	事務、実験室	50	3.5(lab)	768		
	11	昆虫学棟 (ENTOMOLOGY 1)	実験室		5 (lab)	240	研究用実験室	
	12	" (ENTOMOLOGY 2)	"		5 (lab)	250	"	
	13	温室 (Green house)				600		
	3. 水産学部 Faculty of Fisheries	1	中央棟 (MAIN Bldg)	事務、実験室、学級	250	0.9(class)	2,097	(2,917)
		2	農場、実験棟 (FIELD LAB)	実験室	30	4 (lab)	220	
		3	倉庫 (BARN)	魚飼養場			500	
	4. 林学部 Faculty of Forestry	1	学部棟 (Faculty Bldg)	事務、学級、実験室、図書室			(3716)	
	2	森林工学棟 (Forestry Engineering)	実験室、学級	70	5 (lab)	544		
	3		"	70	0.9(class)	676		
	4	森林生産学棟 (Forest Product)	"	150	4 (lab)	1,360		
	5	作業場 (Shop)	"	50	7	496		
	6	" (Shop)	"	25	5	320		
	7	" (Shop)	"	25	5	320		
5. 理学部 Faculty of Science & Art	1	化学棟 (Chemistry)	事務、学級、実験室	500	3.5(lab)	(24,695)		
	2	学部事務室 (Faculty office)	事務			7,506	608	

区 分	番号	建 物 名	建 物 の 機 能	収 容 能 力 (人)	単 位 当 り (m^2 /人)	面 積 (m^2)	備 考
6. 工学部 Faculty of Engineering	3	生物学棟(Biology)	事務、学級、実験室	500	3.5(lab)	5,153	
	4	物理学棟(Physics)	"	300	3.5(lab)	2,977	
	5	言語学棟(Language)	事務、学級	600	0.9(class)	4,618	
	6	数学棟(Mathematics)	"	400	0.9(class)	3,483	拡大されている
	7	温室(Greenhouse)				550	
	1	事務局(Administration)	事務、学級	200	0.9(class)	(10,403)	
	2	実験室(Workshop(CE))	作業場、実験室	60	7.5	3,203	
7. 教育学部 Faculty of Education	3	"(Workshop(ME))	"	50	7.5	750	
	4	"(Workshop(EE))	"	50	7.5	418	
	5	"(Workshop(IE))	"	50	7.5	340	
	6	"(Workshop(AgE))	"	50	7.5	344	
	7	新実験室(New shop)	作業場	100	7.5-10	511	
	8	電気棟(Electric Bldg)	実験室、学級	200	7.5(lab)	1,499	
	1	第1棟(Bldg #1)	事務、学級		1(class)	5,172	
	2	第2棟(Bldg #2)	"		1(class)	2,823	
		付属学校(Demonstration School)			(22,565)		
		第1棟(Bldg #1)		0.9	2,070		
		第2棟(Bldg #2)		0.9	2,828		
		第3棟(Bldg #3)		0.9	2,502		
		第4棟(Bldg #4)		0.9	2,162		

区分	番号	建物名	建物の機能	収容能力 (人)	単位当り ($\frac{m^2}{人}$)	面積 (m^2)	備考
		第5棟 (Bldg # 5) 第1実験室 (Workshop # 1) 第2実験室 (Workshop # 2)			0.9 5 5	5506 750 750	
8. 経済・商学部 Faculty of Economics & Business Administration	1 2 3	事務局 (Faculty Bldg) (Pileya longkorn) 別館 (Annex)	事務局、学級 " "		0.9 (class)	< 4,087 > 2,410 874 805	
9. 獣医学部 Faculty of Veterinary Science	1 2 3 4 5	事務局 (Main Bldg) 大動物病院 (Large Animal Hospital) 解剖・小動物棟 (Post-mortem & Small Animal Hospital) 倉庫 (Barn) " (Barn)	事務局、実験室、学級 小動物用 大動物用	250	5 (lab)	< 3,541 > 2,766 775 645 58 160	
10. 社会学部 Faculty of Social Science	1 2	臨時棟 (Temporary Bldg (# 4)) " (Temporary Bldg (# 5))	事務局、学級 "		0.9 0.9	< 1,040 > 520 520	新建物建築中
11. 大学院 Graduate School		(no its own bldg)	事務局			102 102	集会ホール化とつづけられている。

区分	番号	建物名	建築の機能	収容能力 (人)	単位当り (m^2 /人)	積面 (m^2)	備考
12. 食品研究生産開発 Institute of Food Reserch & Product Development	1	No name	事務、実験室 Pilot tactory			< 4,003 >	
	2	"				110	
	3	"				186	
	4	"				100	
	5	"				300	
	6	"				416	
	7	"				635	
	8	"				410	
	9	"				416	
	10	"				450	
	11	"				150	
	12	"				250	
	13	"				250	
13. 普及、訓練 Extension & Training Center	1	中央棟 Main blding	事務、実教室、学級	300	5(lab)	< 1,979 >	
						1979	1977 6 集会ホールから移動

表-2 パンケン・キャンパス 第1期計画の概要

番号	建築物名	区分	収容能力 (人)	単位面積 (㎡/人)	積算 (㎡)	単価 (千円/㎡)	費用 (千円)	予定工期		進捗状況	備考
								着工	完成		
B1	事務局建物 (Administration Bldg)	Ad	345	1703	5876	3211	18866	1977.9	1978.11	タイ政府により入札	
B1	中央図書館 (Central Library)	Ac	706	1083	7644	3435	26256	"	"	"	
B1	ヘルスセンター(Health Center)	Co	10beds	-	1281	3817	4590	"	"	"	建設費の
B1	管理棟 (Maintenance Bldgs(2))	Ad	65	3205	2083	2299	4789	"	"	"	約25%
B2	農学部 (Faculty of Agriculture)	Ac	161	3348	5391	2449	13200	1977.10	1978.1	大学による入札	は
B2	機械作業場 (Machine Shop)	"	25	1360	390	2010	784	"	"	"	世銀融資
B2	炭冶作業場 (Blacksmith Shop)	"	25	1360	390	2291	894	"	"	"	
B2	家政学部 (Home Economics Dept)	"	102	679	693	2027	1404	"	"	"	
B2	展示棟 (Demonstration House)	"	17	5006	511	2766	1414	"	"	"	
B2	経済・商学部 (Economics BUS, Adm.)	"	69	1652	1140	2517	2869	"	"	"	
B3a	水産学部 (Faculty of Fisheries)	"	332	769	2532	5339	8522	1976.9	1977.11	約45%完成	
B3a	理学部 (Faculty of Science Arts)	"	633	638	4038	3126	12622	"	"	"45%"	
B3b	林学部 (Faculty of Forestry)	"	502	874	4388	2826	12400	1977.1	1978.1	"10%"	
計						56577	-	108910			

表-3 カンパセン・キャンパス 将来構想

学 部 名 等	面 積 (m^2)	単 価 (千円/ m^2)	施 設 費 (千円)	備 考
農学部 (Agriculture)	23,824	4,000	95,296	
獣医学部 (Veterinary Science)	2,766	6,000	16,596	
工学部 (Engineering)	12,154	4,000	48,616	
経済・商学部 (Economics Bus. Ad)	5,480	4,000	21,920	
中央講義室 (Central Lecture)	12,817	4,000	51,268	
水産学部 (Fisheries)	3,650	4,000	14,600	
人類学部 (Humanities)	1,300	4,000	5,200	
林学部 (Forestry)	6,100	4,000	24,400	
科学部 (Sciences)	12,600	4,000	50,400	
教育学部 (Education)	3,600	4,000	14,400	
社会学部 (Social Sciences)	9,600	4,000	38,400	
厚生学部 (Health Sciences)	5,760	4,000	23,040	
経営学部 (Business Technology)	4,100	4,000	16,400	
中央図書館 (Central Library)	16,745	5,000	83,725	
事務局 (Administration)	2,622	4,000	10,488	
管 理 (Maintenance)	1,008	3,000	3,024	
ヘルスセンター (Health Center)	1,500	6,000	9,000	
音楽堂 (Multi-USC Hall)	7,604	3,500	26,614	
大学センター (University Center)	15,562	4,000	62,248	
学生寮 (Student Dormitories)	79,204	3,500	277,214	
スタッフ宿舎 (Staff Housing)	86,453	3,000	259,359	
学部クラブ (Faculty Club)	1,840	4,500	8,280	
小学校 (Primary School)	5,800	3,750	21,750	
中学校 (Secondary School)	36,000	4,000	144,000	
計	358,089	—	1,326,238	

表一 4 カンペンセン・キャンパス 第1期計画の概要

建物 番号	建 物 名	区 分	収容能力 (人)	単位面積 (㎡/人)	積 算 面 積 (㎡)	単 価 (パツ/㎡)	費 用 (千パツ)	予 定 工 期		進 捗 状 況	備 考
								発 行	完 成		
K1	事務局建物 (Administration Bldg)	Ad	237	9.19	2,178	2,072	4,512	1977.8	1978.10		
K1	中央管理棟 (Central Maintenance Bldg)	"	18	2733	492	2,038	1,013	"	"	建設開始	
K1	ヘルスセンター (Health Center)	Co	12 Beds	-	312	5,551	1,670	"	"		
K1	学部クラブ (Faculty Club)	"	216	3.94	860	3,501	3,011	"	"		
K1	一宮ホール (Gen. Hall/Gym/Swimming Pool)	"	-	-	4,144	1,696	7,028	"	"		
K1	中央食堂 (Central Dining Hall)	"	604	1.75	1,054	3,381	3,563	"	"		建設費の 約25%は 世銀融資
K1	大学センター (University Center)	"	467	5.22	2,438	2,586	6,305	"	"		
K2a	中央図書館 (Central Library W/Fac. of Economics & BUS Admin)	Ac	487	5.86	2,855	3,814	10,090	1977.9	"	建設につき 交渉中	
K2b	農学部 (Faculty of Agriculture)	"	1,385	6.02	11,106	3,554	39,250	"	1978.12		
K2c	工学部 (Faculty of Engineering)	"	232	11.10	2,576	3,455	8,900	"	1978.8		
K2d	中央講義棟 (Central Lecture Bldg)	"	1,215	3.62	4,393	2,750	12,080	"	1978.12		
K2e	獣医学部 (Veterinary Science)	"	623	7.84	4,886	4,448	21,733	"	1978.10		
K2e	動物病院 (Animal Hospital)	"	148	19.57	2,897	5,165	9,168	"	"		
K2e	解剖棟 (Post-mortem Bldg)	"	24	3,083	740	4,167	3,084	"	"	タイ政府による 入札競争中	
K2e	倉庫 (Barn)	"	-	-	278	1,420	395	"	"		
K2e	農場勤務棟 (Farm Service Bldg)	Ex	-	-	214	2,604	557	"	"		
K2e	分離会座 (Isolation Barn)	Ac	-	-	77	1,644	126	"	"		
K2e	焼却炉 (Incinerator House)	"	-	-	22	1,981.8	436	"	"		
K3	学生寮 (Dormitory - B. T. 1 (1 Bldg))	Re	55	2,575	849	2,769	2,351	1976.9	1978.4	約25%の進捗 状況	
K3	" (" - B. T. 1 (2 Bldgs))	"	70	2,426	1,698	2,708	4,597	"	"		
K3	" (" - B. T. 2 (1 Bldg))	"	61	2,331	1,422	2,700	3,839	"	"		
K3	" (" - B. T. 3 (1 Bldgs))	"	101	1,385	1,377	2,302	5,216	"	"		
K3	" (" - B. T. 4 (4 Bldgs))	"	564	1,351	7,620	2,170	16,536	"	"		
					54,508		162,259				

建物 番号	建 物 名	区 分	収容能力 (人)	単位面積 (㎡/人)	面 積 (㎡)	単 価 (円/㎡)	費 用 (千円)	予定工期		進捗状況	備 考
								落	工 完		
K3	学生寮 (Dormitory-BT4.1(1Bldg.))	Re	141	1351	1905	2182	4,158	1976.9	1978.4	約25%の 進捗状況	建設費の 約25% は 世銀融資
K3	" (BT4.2(1Bldg.))	"	141	1351	1905	2167	"	"	"		
K3	" (BT5(2Bldgs.))	"	170	1334	2268	2295	"	"	"		
K3	" (BT5.1(1Bldg.))	"	81	1400	1134	2298	2606	"	"		
K3	" (BT6(1Bldg.))	"	97	1540	1494	2439	3644	"	"		
K3	" (BT6.1(1Bldg.))	"	117	1294	1514	2230	3376	"	"		
K3	学生食堂 (Dormitory Dining Hall & Kitchen)	Co	300	612	1836	5711	10485	"	"		
K4a 1.01	農機ステーション (Field Station Office & Central Storage)	Ad	6	3333	200	1774	355	1977.8	1978.3		
K4a 1.02	農機ステーション (Maint. Shop 修理作業場)	"	-	-	96	1,662	160	"	"		
K4a 1.03	サービスステーション (Service Station)	"	-	-	106	2,143	227	"	"		
K4a 1.04	農機設備棟 (Farm Equipment Shed)	"	-	-	450	472	212	"	"		
K4a 1.05	中央種子倉庫 (Central Seed Storage & Cold Storage unit)	"	-	-	246	2,569	632	"	"		
K4a 2.01	動物学実験棟 (Animal Science Experimental Slaughter House & Meat Lab.)	Ac	12	2000	240	3,477	835	1977.8	1978.3		
K4a 2.02	貯蔵庫 (Trench Silo)	"	-	-	232	540	125	"	"		
K4a 2.03	飼料供給棟 (Dairy Feeding Shed (2))	"	-	-	644	868	559	"	"		
K4a 2.04	馬房 (Free Stall Barn (2))	"	-	-	392	1,654	643	"	"		
K4a 2.05	ミルク室 (Milk Parlour)	"	-	-	200	2,105	421	"	"		
K4a 2.06	ふ卵所 (Hatchery)	"	-	-	324	655	212	"	"		
K4a 2.07	ひな棟 (Brooder Unit)	"	-	-	462	572	264	"	"		
K4a 2.08	産卵棟 (Layer Unit)	"	-	-	356	775	260	"	"		
K4a 2.09	ブロイラー棟 (Broiler Unit)	"	-	-	396	999	396	"	"		
K4a 2.10	鶏舎棟 (Breeder Unit)	"	-	-	120	1410	169	"	"		
K4a 2.11	動物隔離棟 (Animal Isolation clinic)	"	-	-	182	2,245	409	1977.8	1978.3		
K4a 3.01	園芸学農機棟 (Horticulture Field Office Lab.)	"	29	627	7190	20,733					

