

BASIC DESIGN STUDY REPORT  
ON  
THE PROJECT FOR IMPROVEMENT OF  
EDUCATIONAL EQUIPMENT FOR  
THE UNIVERSITY OF GOROKA  
IN  
PAPUA NEW GUINEA

MARCH 2004

JAPAN INTERNATIONAL COOPERATION AGENCY  
UNICO INTERNATIONAL CORPORATION

BASIC DESIGN STUDY REPORT  
ON  
THE PROJECT FOR IMPROVEMENT OF  
EDUCATIONAL EQUIPMENT FOR  
THE UNIVERSITY OF GOROKA  
IN  
PAPUA NEW GUINEA

MARCH 2004

JAPAN INTERNATIONAL COOPERATION AGENCY  
UNICO INTERNATIONAL CORPORATION

## PREFACE

In response to a request from the Government of Papua New Guinea, the Government of Japan decided to conduct a basic design study on the Project for Improvement of Educational Equipment for the University of Goroka and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent to Papua New Guinea a study team from November 8 to December 9, 2003.

The team held discussions with the officials concerned of the Government of Papua New Guinea, and conducted a field study at the study area. After the team returned to Japan, further studies were made. Then, a mission was sent to Papua New Guinea in order to discuss a draft basic design, and as this result, the present report was finalized.

I hope that this report will contribute to the promotion of the project and to the enhancement of friendly relations between our two countries.

I wish to express my sincere appreciation to the officials concerned of the Government of Papua New Guinea for their close cooperation extended to the teams.

March 2004

Kunimitsu Yoshinaga  
Vice-President  
Japan International Cooperation Agency

March 2004

### **Letter of Transmittal**

We are pleased to submit to you the basic design study report on the Project for Improvement of Educational Equipment for the University of Goroka in Papua New Guinea.

This study was conducted by UNICO International Corporation, under a contract to JICA, during the period from November 2003 to March 2004. In conducting the study, we have examined the feasibility and rationale of the project with due consideration to the present situation of Papua New Guinea and formulated the most appropriate basic design for the project under Japan's grant aid scheme.

Finally, we hope that this report will contribute to further promotion of the project.

Very truly yours,

Wataru Shiga  
Project manager,  
Basic design study team on the Project for  
Improvement of Educational Equipment for  
the University of Goroka,  
UNICO International Corporation

## LOCATION MAP



Papua New Guinea



Location of Goroka

## **GLOSSARY OF TERMS AND ABBREVIATIONS**

ADB	:	Asian Development Bank
A/P	:	Authorization to Pay
AusAID	:	Australian Agency for International Development
AV	:	Audio Visual
CRIP	:	Curriculum Reform Implementation Project
E/N	:	Exchange of Notes
EU	:	European Union
GDP	:	Gross Domestic Products
IBRD	:	International Bank for Reconstruction and Development
ISP	:	Internet Service Provider
JICA	:	Japan International Cooperation Agency
LAN	:	Local Area Network
LL	:	Language Learning
MTDS	:	Medium Term Development Strategy
NCS	:	National Curriculum Statement
NEP	:	National Education Plan
OJT	:	On the Job Training
PNG	:	Papua New Guinea
UNDP	:	United Nations Development Organization
UNICEF	:	United Nations International Children's Emergency Fund
UNITECH	:	PNG University of Technology
UOG	:	The University of Goroka
UPNG	:	University of Papua New Guinea
UPS	:	Uninterruptible Power Supply

## SUMMARY

## Summary

The foundation of the industrial base of Papua New Guinea (PNG) is the agricultural sector (including forestry and fishery industries) and is estimated to provide 85% of employment to the nation. It is observed that a dual economy exists in the form of a self-sufficient sector in rural areas and a cash economy in urban areas. Eighty percent of the land is covered by tropical forest, in addition to which PNG has 3,120,000 sq km of economically valuable water area, meaning that the nation is endowed with formidable wood, mineral, and marine resources. This is reflected in the composition of the gross domestic product, that in 2002 was made of a 24.4% share for agriculture, forestry and fishery products, and 37.8% share for mining and manufacturing (of which manufacturing had 8.8%). The remainder was provided by commerce, 8.6%, and other sectors, 29%. Principal agricultural products are root crops, fruits and vegetables, all for domestic consumption, and commercial crops grown for export (cocoa, coffee, tea, copra, palm oil, rubber), logs, chips for lumber and plywood, and sea catches (bonito, tuna, shrimp), that account for more than 30% of total exports. Foreign capital and technology has been used to develop the rich mineral resources of the country, and increases in mining of gold, silver and copper have made significant contributions to the economic development of the nation. Exportation of mineral resources, including crude oil the recovery of which was begun in 1992, provides nearly 70% of the value of exports, and is the nation's largest export sector. These conditions, however, mean that the industrial structure of PNG has an inherent weakness in that dependency on natural resources translates into vulnerability to adverse or volatile weather, and to world market prices for commodities. Moreover, inasmuch as there is extremely strong influence of overseas investors on the development, production and sale of mineral resources, that account for a major share of export earnings, the PNG government is now undertaking to development of agriculture, forestry, and fishery resources, as well as manufacturing (particularly light manufacturing) at its own initiative, on the basis of the understanding that exploitation of mineral resources alone cannot assure sustained economic growth.

Utilizing recommendations and assistance from the IMF and World Bank, the PNG government is following a course of structural adjustments within its Medium-Term Development Strategy, so that it can put the economy back on a sound growth path and stabilize the macro-economy. Donors are assisting the government's efforts at financial stabilization. The medium-term strategy has the objectives of expanding productive activities in the industrial sectors through achieving development of the private sector, and of creating jobs, rather than the objective of achieving economic autonomy. Within these larger-scope objectives the government intends to create and adopt new primary, secondary and adult literacy school curricula, improve the capabilities of educators and increase their number, and augment and improve educational facilities and equipment, on the basis of the government view of the importance of education for improvement of the standard of living of more than 80% of the population living in rural areas and of the importance of providing education that satisfies their requirements. The PNG



government is making progress at present in developing vocational education courses conforming to the needs of industry so as to improve the matching of available skills and the requirements of the labor market.

During 1990-1995 the Department of Education undertook its Education Sector Review, examining the present conditions and issues in the field of education. This enables the government to identify the problem of a high dropout rate at primary school levels, the high rate being attributed to a loss of motivation caused by adoption of curricula that being from foreign countries did not match the social conditions of PNG. In addition, the rate of advancement to secondary school and from that level to higher ones is low, and in the overall field of education, administrative functions are weak and budget allocations are insufficient. The Education (Amendment) Act of 1995 was enacted in 1995 with the specific purpose of achieving a breakthrough in efforts to fundamentally resolve these problems. Subsequently, on the basis of this law, the National Education Plan (1995-2004) was formulated to provide the government's framework for long-term planning for reform of the educational system and school curricula. Reform of the educational system is primarily through replacing the former six years of primary school (grades 1-6), four years of secondary school (grades 7-10), and two years of high school (grades 11 and 12) by a system made up of three years of elementary school (Preparatory and grades 1, 2), six years of primary school (grades 3-8; schooling up to this is considered as basic education), two years of junior secondary school (grades 9 and 10), and two years of upper secondary school (grades 11 and 12). The change in the educational system at the level of secondary schools, whereby the previous grades 7 and 8 are shifted to primary school (a top-up change for primary education), and grades 11 and 12 are shifted from high school to secondary school (top-up for secondary school) implies a raising of the level of education at the secondary school level, a change that in turn requires change and improvement of the content of the training program for secondary school teachers.

Against this background, the University of Goroka, the sole PNG institution that offers education for secondary schoolteachers, must prepare teachers who are equipped to teach grades 11 and 12 after the reforms, and in particular are certified to teach vocational and scientific courses. The university therefore has endeavored to reform its curriculum with emphasis now being given to deepening and advancing the content of teaching, as well as on-site practice in education. The university also is revising its student grading system and the number of credits given for each course. The practice-teaching component of vocational and technical education courses has been given higher standing, a degree program in agricultural education is being developed, and progress is evident in the adoption of teaching methods that utilize information technology and audio-visual equipment. Despite these impressive efforts, the results of the reform activities have not been as strong as desired, because of the antiquated and worn-out conditions of much of the educational equipment used, as well as a shortage of equipment in quantitative terms because of the increase in enrollment, and a lack of equipment that has

come to be needed because of the adoption of the new curriculum. This is particularly evident at the open computer laboratories, which are intensively used by the students. There are two, one for men and one for women, but the men often use the computers in the women's room, to the extent that it makes it difficult for the women to study and use the computers. In addition, as is discussed below, the maintenance and management of the university's equipment for educational use is divided among the departments and sections, and the frequency or extent of use of the equipment varies considerably. This has resulted in duplication or excessive ordering of consumable supplies and parts, a financial cost that can be easily avoided. The university has attempted to centralize the maintenance and management of equipment, as well as the process of replacement and new acquisition of equipment, but because higher priority in budgeting has been assigned to the improvement of facilities, the university has been unable to replace and acquire equipment as planned. For this reason, the PNG government has requested grant aid from Japan for improvement of educational equipment at the University of Goroka.

In response to this request, the Government of Japan decided to conduct a basic design study and entrusted the study to examine the viability of the Project to the Japan International Cooperation Agency (JICA). JICA sent the study team to PNG and identified the background and contents of the Project as incorporated in this report.

The present project, for which Japanese grant aid has been requested, has as its major operational aspect the procurement of equipment to either replace outmoded or lacking equipment, or add to the available educational equipment at the University of Goroka, so that ongoing efforts at training new teachers for secondary school work and raising the certification levels and abilities of existing teachers will be more effective and efficient. Through giving priority to improvement of equipment used in the departments and teaching sections where female students dominate, and by newly equipping a computer laboratory dedicated to use by the women, the environment for the education of women will be improved. The content of the education offered at the university would thereby be enhanced and expanded, the abilities of the faculty will be improved, and ultimately secondary school students will receive a better education. The project will also include services in soft component for establishing overall management and maintenance system of the equipment at the university to attain its sustainability.

The equipment in the scope of this project is broadly separable into three categories as below.

1) Machinery and devices

- Educational equipment (equipment for the lab. practical; agricultural equipment, machine tools, sewing machines, kitchen equipment, computers, tools, musical instruments etc.)
- Equipment for supporting educational activities (AV equipment, lighting fixtures or equipment, computers, printing machinery, stand-by generator, etc.)

- 2) Educational materials and models (slides, videotapes, scale models, etc.)
- 3) Furniture (reading tables, chairs, book stacks, cabinets. etc.)

The total expenses necessary in the event that this project is realized through the grant aid program of the Japanese government is on the order of 279 million Japanese yen. Period for detailed design, and equipment procurement and installation work, etc. is estimated as about 4 months for the former, and about 8 months for the latter.

The following are the results that are expected from realization of this project that is intended to improve the educational equipment used at the University of Goroka as it endeavors to educate and prepare secondary school teachers in compliance with the PNG government's Medium-Term Development Strategy and the education sector's National Education Plan.

- Through the effects of improvement of the equipment used for practice in specialized courses of pedagogy program at the University of Goroka it will be possible for all students of the university (about 1,000) to engage in hands-on experiments, contributing to the deepening of their education.
- By improving the equipment that is used to prepare teachers for instructing upper secondary-school classes (grades 11 and 12), it will be possible to elevate the level and improve the content of education for the benefit of both faculty and students (total, about 1,500 persons).
- Through giving priority to improvement of equipment used in the Home Economics section where female students dominate, and by newly equipping a computer laboratory dedicated to use by the women, two changes intended to improve the gender balance, the environment for the education of women will be improved.
- Improvement of equipment for the production of educational aids in various media (print, audio, images) will mean substantial improvement in terms of educational technology, and make it possible for the faculty and students to use latest instruction methods that utilize new technology.

The equipment planned for supply under this project can be operated, maintained, and managed by PNG through use of its own human and technical resources. There is the possibility that use of some of the planned equipment can generate modest income, and such income could be used to defray a part of the cost of maintaining the equipment, thereby ensuring a long viable life for the equipment to be provided. The project would not have any undesirable impact on the environment. In view of the foregoing, it is concluded that it is possible to implement this project in the grant aid program without encountering any particular problem. If, however, there is an improvement regarding the following

points, implementation of the project would be that much smoother and more effective.

(1) Assuring Budgetary Provisions, and Monitoring

The University of Goroka must apply to the Department of Finance during the previous year for a budget allocation each year that will cover the costs of maintaining and managing any equipment supplied under this project. It is a major assumption behind planning of this project that these budgetary measures will be taken, so as to ensure the proper maintenance and management of the equipment over the long term. To make certain that this is in fact the case, it will be necessary for the PNG government to report to Japan on a regular basis the conditions regarding allocation of budgets to the university.

(2) Improvement of the System for Operating and Maintaining Equipment

In the event that this project is implemented as planned, the existing staff at the university charged with operation and maintenance as well as management of educational equipment will be required to extend their work to include the newer, larger and more diversified assortment of equipment. It will be unavoidable for the number of persons in charge of maintenance and management of audio-visual equipment to be increased, as the new equipment will involve new technology. It is further expected that cooperation will be provided to the university as services in the soft component in regard to constructing a unified maintenance and management system for all of the educational equipment of the university, but for this to be done the university must select the persons responsible, and make whatever preparations are necessary, prior to the start of the service.

## TABLE OF CONTENTS

**Preface**

**Letter of Transmittal**

**Location Map**

**Abbreviations**

**Summary**

<b>Chapter 1 Background of the Project</b> .....	1-1
<b>Chapter 2 Contents of the Project</b> .....	2-1
2-1 Basic Concept of the Project .....	2-1
2-2 Basic Design of the Requested Japanese Assistance .....	2-2
2-2-1 Design Policy .....	2-2
2-2-2 Basic Plan (Equipment Plan) .....	2-7
2-2-3 Basic Design Drawing .....	2-43
2-2-4 Implementation Plan .....	2-55
2-2-4-1 Implementation Policy.....	2-55
2-2-4-2 Implementation Conditions .....	2-56
2-2-4-3 Scope of Works .....	2-56
2-2-4-4 Consultant Supervision.....	2-57
2-2-4-5 Procurement Plan.....	2-58
2-2-4-6 Soft Component.....	2-60
2-2-4-7 Implementation Schedule .....	2-65
2-3 Obligations of the Recipient Country .....	2-66
2-4 Project Operation Plan .....	2-67
2-5 Estimated Project Cost .....	2-67
2-5-1 Project Cost .....	2-67
2-5-2 Operating and Maintenance Cost.....	2-69
<b>Chapter 3 Project Evaluation and Recommendations</b> .....	3-1
3-1 Project Effect .....	3-1
3-2 Recommendations .....	3-2

**[Appendices]**

1. Member List of the Study Team.....	A1-1
2. Study Schedule .....	A2-1
3. List of Parties Concerned in the Recipient Country .....	A3-1
4. Minutes of Discussion (Basic Design Study).....	A4-1
5. Minutes of Discussion (Consultation on Draft Report).....	A5-1
6. References .....	A6-1

## CHAPTER 1 Background of the Project

## Chapter 1 Background of the Project

Papua New Guinea (PNG) possesses a total of 460,000 km<sup>2</sup> of land area, about 1.25 times that of Japan; of this area 88% is comprised of the eastern half of the New Guinea and the remainder is more than 600 islands, making the nation the largest insular country of the Pacific. As of 2002 the population was 5,400,000 and the annual rate of increase was 2.2%. Most of the people are of Melanesian stock. Half of the population lives in the highlands in the central part of the island. Because the island lies within the tropical monsoon belt, 80% of the land is covered by tropical forest, in addition to which PNG has 3,120,000 sq km of economically valuable water area, meaning that the nation is endowed with formidable wood, mineral, and marine resources. This is reflected in the composition of the gross domestic product, that in 2002 was made of a 24.4% share for agriculture, forestry and fishery products, and 37.8% share for mining and manufacturing (of which manufacturing had 8.8%). The remainder was provided by commerce, 8.6%, and other sectors, 29%. A dual economy exists in the form of a self-sufficient sector and a cash economy. Primary industry dominates in the national economy.

The agricultural sector (including forestry and fishery industries) is the foundation of the industrial base and is estimated to provide 85% of employment. Principal agricultural products are root crops, fruits and vegetables, all for domestic consumption, and commercial crops grown for export (cocoa, coffee, tea, copra, palm oil, rubber), logs, chips for lumber and plywood, and sea catches (bonito, tuna, shrimp), that account for more than 30% of total exports. Foreign capital and technology has been used to develop the rich mineral resources of the country, and increases in mining of gold, silver and copper have made significant contributions to the economic development of the nation. Exportation of mineral resources, including crude oil the recovery of which was begun in 1992, provides nearly 70% of the value of exports, and is the nation's largest export sector. These conditions, however, mean that the industrial structure of PNG has an inherent weakness in that dependency on natural resources translates into vulnerability to adverse or volatile weather, and to world market prices for commodities. Moreover, inasmuch as there is extremely strong influence of overseas investors on the development, production and sale of mineral resources, that account for a major share of export earnings, the PNG government is now undertaking to development of agriculture, forestry, and fishery resources, as well as manufacturing (particularly light manufacturing) at its own initiative, on the basis of the understanding that exploitation of mineral resources alone cannot assure sustained economic growth.

A wide-margin decline in gold and copper mining output has been necessitated, however, by the decline in hydropower generation resulting from lower reservoir levels subsequent to early drought, an effect of El Nino. The decline has been strong enough to impact the PNG trade balance. Further, there have been declines in crude oil recovery and in crop yields, in some regions, because of tribal conflicts. These factors were instrumental in engendering declines in the GDP for the recent years. Meanwhile, the national currency, the kina, lost 40% of its value relative to the US dollar in 2002, and the domestic inflation rate was 14.8%. In combination, these adverse factors have forced the PNG government to



confront the problem of repeated government deficits and deficits on the international accounts, obliging adoption of restraints on investment and spending by the government. The public sector, including education, is therefore unable to expect increases in budgetary allocations.

Utilizing recommendations and assistance from the IMF and World Bank, the PNG government is following a course of structural adjustments within its Medium-Term Development Strategy, so that it can put the economy back on a sound growth path and stabilize the macro-economy. Donors are assisting the government's efforts at financial stabilization. The medium-term strategy has the objectives of expanding productive activities in the industrial sectors through achieving development of the private sector, and of creating jobs, rather than the objective of achieving economic autonomy. Within these larger-scope objectives the government intends to create and adopt new primary, secondary and adult literacy school curricula, improve the capabilities of educators and increase their number, and augment and improve educational facilities and equipment, on the basis of the government view of the importance of education for improvement of the standard of living of more than 80% of the population living in rural areas and of the importance of providing education that satisfies their requirements. The PNG government is making progress at present in developing vocational education courses conforming to the needs of industry so as to improve the matching of available skills and the requirements of the labor market.

During 1990-1995 the Department of Education undertook its Education Sector Review, examining the present conditions and issues in the field of education. This enables the government to identify the problem of a high dropout rate at primary school levels, the high rate being attributed to a loss of motivation caused by adoption of curricula that being from foreign countries did not match the social conditions of PNG. In addition, the rate of advancement to secondary school and from that level to higher ones is low, and in the overall field of education, administrative functions are weak and budget allocations are insufficient.

The Education (Amendment) Act of 1995 was enacted in 1995 with the specific purpose of achieving a breakthrough in efforts to fundamentally resolve these problems. Subsequently, on the basis of this law, the National Education Plan (1995-2004) was formulated to provide the government's framework for long-term planning for reform of the educational system and school curricula.

Reform of the educational system is primarily through replacing the former six years of primary school (grades 1-6), four years of secondary school (grades 7-10), and two years of high school (grades 11 and 12) by a system made up of three years of elementary school (Preparatory and grades 1, 2), six years of primary school (grades 3-8; schooling up to this is considered as basic education), two years of junior secondary school (grades 9 and 10), and two years of upper secondary school (grades 11 and 12), as shown in Fig. 1-1.

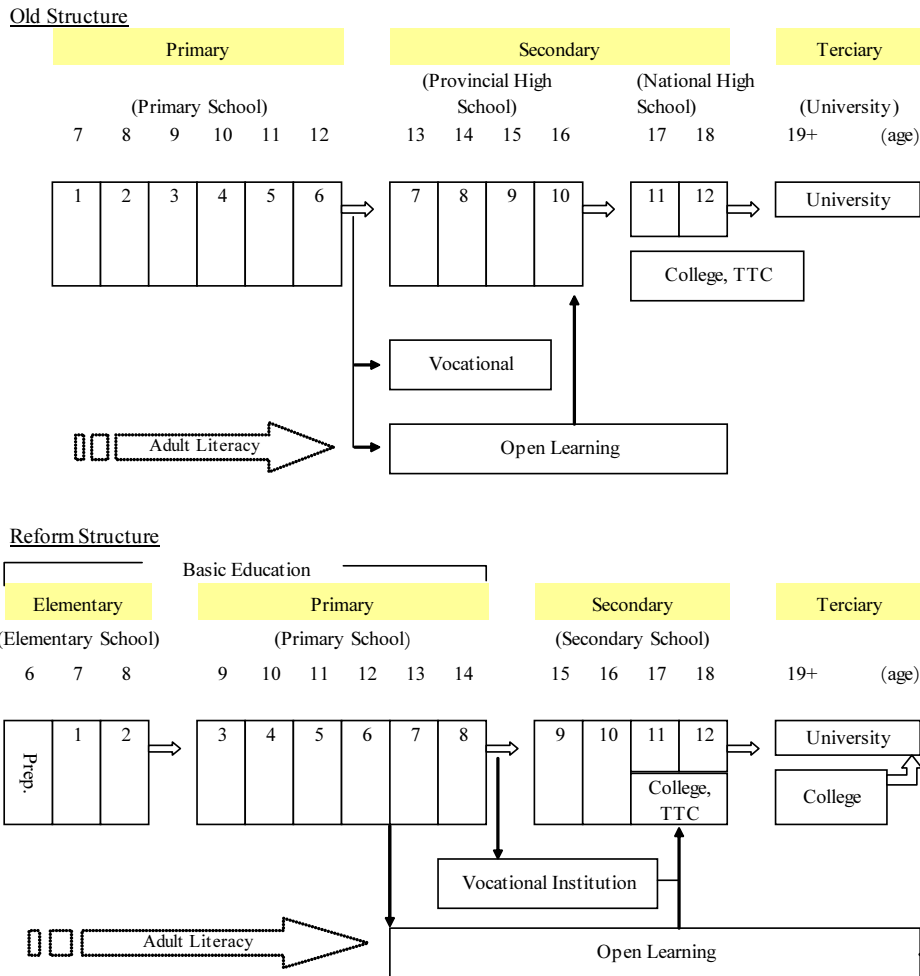


Fig. 1-1 Reform of PNG Education System

This reform is intended to expand educational opportunities for children by promoting the participation of local communities in basic education levels, and by providing education in vernacular languages. The goal in this context is to reduce the dropout rate at primary level, which is as high as 60% and had been identified as a serious problem in the old system. Further, considerations are being given to improving the technical-, agricultural-, commercial- and scientific-related vocational courses at all levels. The thinking behind this is that this change will motivate students and improve their potential as workers, so that they are capable of participating in society at whatever level of schooling they have completed. Implementing these educational reforms are expected to contribute to the formation of a more democratic society and to the improvement of productivity through participation by the people, as well as to realization of broad economic and social benefits.

The change in the educational system at the level of secondary schools, whereby the previous grades 7 and 8 are shifted to primary school (a top-up change for primary education), and grades 11 and 12 are shifted from high school to secondary school (top-up for secondary school) implies a raising of the level

of education at the secondary school level, a change that in turn requires change and improvement of the content of the training program for secondary school teachers.

The major objectives of the National Education Plan are as follows.

- Development of an educational system that meets the requirements of the people of Papua New Guinea
- Free access to basic schooling for all children
- Enlightenment of the people regarding non-formal education and literacy program
- Supply of higher education and development training programs as required for the manpower development

In order to achieve these objectives, progress is being made in implementing specialized programs such as the literacy and information program, education for all program, education access and expansion program, and higher-education program. The following policies have been adopted, moreover, on behalf of economically effective development of education, given the budgetary constraints of the times.

- The average class size is to be 30 for elementary education, 40 for primary education, 35 for junior secondary school, and 30 for upper secondary school.
- Classes should be regrouped at grades 3, 6, 9, 11
- The assignments of teachers will be made according to the agreed national criteria
- Distance education should be the principal mode for teacher upgrading.

Specific objectives to be achieved by 2004 have been set on the basis of the above for each level, as follows.

- All children are to receive basic education
- Enrollment in junior secondary school (grades 9 and 10) is to be doubled.
- There is to be enrollment of 5,000 students in each of the upper secondary school grades (grades 11 and 12).
- Increased enrollment of girls is to be achieved at all levels.
- Curricula appropriate to the realities of the pupils and students are to be developed.

The educational reform started taking place in 1993 and has made steady progress since then. The change in the number of pupils and students before and after reforms, in primary and secondary school, is as shown in Table 1-1, from which it is evident that the objective stated above, of reform at the secondary school level, has largely been accomplished. With regard to the teachers, who are at the front lines in the realization of the reforms, despite the existence of plans to increase their number, as shown in Table

1-2, there is the additional need to counter the effects of a natural decrease through attrition (retirement and quitting). Demand for teachers is also increased by the plan to replace the 5-6% of the foreign teachers by Papua New Guinea nationals. It is indispensable, further, to certify more teachers and raise teaching skills and capabilities of existing teachers so that the educators in classrooms after the top-up of grades 11 and 12 are qualified for their assigned work.

Table 1-1 Annual Enrolment Growth with Reform Activities (1994 - 2004)

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
G3	82,571	90,205	87,808	89,379	92,714	103,298	112,549	109,024	113,253	119,359	125,955
G4	75,421	76,127	78,487	77,859	79,667	84,037	93,984	102,697	99,885	104,017	109,911
G5	64,834	69,320	65,954	69,263	68,882	71,935	75,938	85,183	93,457	91,222	95,223
G6	56,169	59,290	59,187	57,196	59,942	61,203	63,950	67,584	76,036	83,682	82,087
G7	23,236	26,243	29,071	33,393	36,662	41,868	47,608	52,901	57,110	60,827	64,280
G8	19,251	21,108	23,772	26,175	29,783	34,881	39,732	45,199	50,231	54,228	57,753
Sub Total	321,482	342,293	344,279	353,265	367,650	397,222	433,761	462,588	489,972	513,335	535,209
G9	15,766	16,452	17,189	17,585	19,192	23,198	25,597	28,331	30,304	32,020	33,347
G10	12,712	14,205	14,940	15,574	15,752	17,630	21,314	23,521	26,035	27,850	29,429
G11	676	907	1,296	1,423	2,104	2,704	3,064	3,334	3,544	3,694	3,784
G12	124	632	1,101	1,220	1,469	1,999	2,569	2,911	3,167	3,367	3,509
Sub Total	29,278	32,196	34,526	35,775	38,517	45,531	52,544	58,097	63,050	66,931	70,069

Remarks: "G" shows grade.

Source: The EFA 2000 Assessment: Country Report - Papua New Guinea

Table 1-2 Expected Growth in Teacher Demand without Reform Activities (1994 - 2004)

	Primary Grades 1-6	Junior secondary Grades 7-10	Senior secondary Grades 11-12	Total Teachers
1994	15,153	2,747	118	18,017
1995	15,770	3,025	145	18,940
2000	18,339	3,677	216	22,232
2004	20,085	4,130	265	24,480

Source: The EFA 2000 Assessment: Country Report - Papua New Guinea

Against this background, the University of Goroka, the sole PNG institution that offers education for secondary schoolteachers, must prepare teachers who are equipped to teach grades 11 and 12 after the reforms, and in particular are certified to teach vocational and scientific courses.

The University of Goroka was founded as the Primary Teachers College in 1965, and in 1968 was elevated to train secondary school teachers, as the Secondary Teachers College. As part of the administrative reforms following on PNG's attaining independence in 1975, it was merged into the University of Papua New Guinea (UPNG). Until 1992, training of secondary school teachers took place at both the Goroka Campus and the Port Moresby Campus; in that year all such instruction was

concentrated at Goroka. Then, in February 1997 the University of Goroka Act made that campus into the University of Goroka, a national school. At this time, it is the only one of the four national universities where pedagogy instruction is offered. The university has three faculties, education, humanities, science, and provides pre-service education and training for teachers at secondary schools and vocational schools, as well as in-service education and training for teachers seeking additional or higher-level certification. Research activities are also carried out.

The teacher training course of study at the University of Goroka is open to applicants who have completed grade 12 or are presently employed as teachers. The bachelor of education is granted to graduates of the pre-service four-year program for students and the in-service two-year program for teachers. Enrollment in 2002 totaled 950 in addition to which 630 teachers participated in an intensive summer training program called Lahara. The same year, 304 students graduated, and 161 persons completed the summer program. Of the university's graduates, about 84% are or go on to secondary school teaching, about 7% are civil servants (incl. health officers) and about 6% teach at vocational schools. The small remainder is a group that has a diverse employment pattern: civil service (administrators), university faculty, private-sector work, and the like. All graduates found employment.

The scale of the staff in the academic services in 2002 was 72, besides which there were 20 persons engaged in non-teaching jobs. 48% of the faculty have master's degrees, and 28% have Ph.D. degrees. The remaining 24% have bachelor's degrees, so it is evident that the quality of the faculty qualifications is relatively high. There are 74 persons working as administrative staff, providing support and services for faculty and students. The administrative staff includes 12 instructors and the librarian all of whom are foreign nationals.

On the basis of the National Education Plan, the University of Goroka must educate and train teachers who qualify for teacher's certificates for high school education, and in particular are highly capable of teaching the vocational and scientific subjects that have rapidly increased in importance in the recent years. The university therefore has endeavored to reform its curriculum with emphasis now being given to deepening and advancing the content of teaching, as well as on-site practice in education. The university also is revising its student grading system and the number of credits given for each course. The practice-teaching component of vocational and technical education courses has been given higher standing, a degree program in agricultural education is being developed, and progress is evident in the adoption of teaching methods that utilize information technology and audio-visual equipment. On the other hand, the university has planned and implemented improvements of related teaching facilities (health, design-technology, the training farm, etc.) and public facilities (the library, the multipurpose theatre, the main quadrangle, staff housing, the student mess, etc.) not to overlook improvements in educational and service facilities that use information technology (the library indexing system, the campus LAN, the computer laboratories, etc.), with assistance from the PNG government and AusAID.

Despite these impressive efforts, the results of the reform activities have not been as strong as desired, because of the antiquated and worn-out conditions of much of the educational equipment used, as

well as a shortage of equipment in quantitative terms because of the increase in enrollment, and a lack of equipment that has come to be needed because of the adoption of the new curriculum. This is particularly evident at the open computer laboratories, which are intensively used by the students. There are two, one for men and one for women, but the men often use the computers in the women's room, to the extent that it makes it difficult for the women to study and use the computers. In addition, as is discussed below, the maintenance and management of the university's equipment for educational use is divided among the departments and sections, and the frequency or extent of use of the equipment varies considerably. This has resulted in duplication or excessive ordering of consumable supplies and parts, a financial cost that can be easily avoided. The university has attempted to centralize the maintenance and management of equipment, as well as the process of replacement and new acquisition of equipment, but because higher priority in budgeting has been assigned to the improvement of facilities, the university has been unable to replace and acquire equipment as planned. For this reason, the PNG government has requested grant aid from Japan for improvement of educational equipment at the University of Goroka. The requested items of equipment are categorized as follows:

Table 1-3 Summary of the Request

Code	Category	Major Items
A	Equipment for Multipurpose Lecture Theater	Spot lights, presentation equipment, etc.
B	Equipment for the New Library	Furnitures, computers, AV equipment, etc.
C	Equipment for AV Section	AV equipment, tools, etc.
D	Equipment for Printery Section	Printing machine, binding machine, etc.
E	Equipment for Language Laboratory	Language learning system, AV equipment, etc.
F	Equipment for Educational Technology Section	AV equipment
G	Equipment for Computer Laboratories	Computers, peripheral items
H	Equipment for Music Section	Musical instruments, computers, etc.
I	Equipment for Agriculture Section	Analytical equipment, farm equipment, etc.
J	Equipment for Science Section	Analytical equipment, teaching aids, etc.
K	Equipment for Other Lecture & Classrooms	AV equipment
L	Equipment for Design & Technology Section	Machine tools, tools, etc.
M	Equipment for Home Economics Section	Sewing machines, cooking equipment, etc.
N	Equipment for Technical Vocational Section	Hand tools, power tools, etc.
O	Office Equipment	Office equipment, AV equipment
P	Other (Stand-by Generator)	Generator

## CHAPTER 2 Contents of the Project

## Chapter 2 Contents of the Project

### 2-1 Basic Concept of the Project

Under the Medium Term Development Strategy, Papua New Guinea is progressing with economic development in keeping with the vital objectives of achieving economic autonomy, promotion of the development of the private sector in order to expand productive activities in various industrial sectors and create jobs. The Strategy is consistent with PNG government thinking in that it seeks to raise the income and living standard levels by the efforts of the people themselves, and without reliance on foreign workers. Implementation is proceeding of the policy of creating jobs and increasing in output in the rural sector as well as the urban sector, as well as the development of human resources possessing improved technical skills and abilities. The Strategy places education and human resources development in the category of highest-priority and efforts are being made at the development of basic education processes and systems, as elevation of the educational level of the nation. The National Education Plan 1995-2004 was formulated within this context, to expand and augment the national education sector. Under this Plan, in order to improve the standard of living in the rural sector, where 80% of the population lives, work is now being done to 1) develop and implement curricula for primary school, secondary school, and adult education levels that match the needs of PNG society; 2) achieve quantitative increases and qualitative improvement of educators, and 3) control education costs. With regard to the content of education from the secondary school level onward, moreover, curricula are under development that will match requirements in the job market. In particular, the content of subjects and courses is being harmonized with the needs of industry.

School system reforms, and long-term educational reforms planned around a framework of curriculum reform, are being carried out. School system reform has primarily comprised a change from a 6-year primary school (Grades 1-6), 4-year secondary school (Grades 7-10), and 2-year high school (Grades 11, 12) to a 3-year elementary education period (Preparatory, Grades 1-2), a 6-year primary education period (Grades 3-8, all of the above collectively comprising basic education) followed by 2 years each of lower secondary school (Grades 9, 10) and upper secondary school (Grades 11, 12). In particular, in basic education, the participation of the communities themselves is being encouraged, and local languages and dialects are being used in order to expand access to education at this level and wipe out the problem of a 60% dropout rate that was recorded for the old elementary school system. Further, in connection with the curricula at all educational levels efforts are being made to improve vocational courses in the technology, agriculture, commerce, and engineering areas, and to improve courses in the sciences.

The actual start of education reform was in 1993 and the reform effort has been expanded gradually to all levels of schooling. Need exists, moreover to increase the number and improve the abilities of



teachers, to offset resignations and retirements. There is demand, additionally, to localize education by replacing foreign teachers, who are 5-6% of the total, with national teachers. It is indispensable, further, to improve the abilities and overall quality of instructors in keeping with deepening and advancement of the content of education resulting from reform of the curricula, and to improve the qualifications of those teachers holding temporary teaching licenses. The key role in this is to be taken by the University of Goroka, which is the only institution in the nation that educates secondary-level teachers. As this is not going to be sufficient to accomplish the goals of developing the skills of the teaching body, and increasing the number of teachers, the PNG government plans call for deepening the content of teacher training courses at the university as a key means of developing the body of secondary-level teachers.

The objective of this project is, as part of the university's master plan, to plan the expansion of the University of Goroka campus in keeping with the reform program described above, and to improve the educational facilities, equipment and materials as required. Accomplishment of this project therefore will contribute to the improvement of the University's ability to train teachers and to provide educational guidance of high quality and in keeping with the requirements of the various secondary-level educational institutions of the nation. As part of this project, in addition to furnishing educational equipment as required for the University of Goroka, a soft component will be implemented in order to improve the university's ability to manage the equipment.

## 2-2 Basic Design of the Requested Japanese Assistance

### 2-2-1 Design Policy

#### (1) Basic Design

The PNG National Department of Education announced its National Curriculum Statement in 2002, basing it on national development objectives in the Medium Term Strategy and development guidelines for the educational sector incorporated in the National Education Plan. The Statement is also a consequence of the curriculum reform for basic education, primary education and secondary-level education devised through the Curriculum Reform Implementation Project (CRIP), a development project supported by the Australian government. In that project the guidelines for curriculum reform in school education were given as shown in Table 2-1.

On the basis of the curriculum guidelines for secondary level education (lower and upper secondary school, Grades 9-12), as well as the curricula for study of special subjects now in use in vocational schools and technical schools, a teachers training program was formulated (as in Table 2-2) by the University of Goroka, and is being implemented.

Table 2-1 Areas of Study and Corresponding Subjects

Learning Area	Elementary	Lower Primary	Upper Primary	Lower Secondary	Upper Secondary
	P, E1, E2	G3 ~ G5	G6 ~ G8	G9, G10	G11, G12
Culture and Community	Arts Community Living Environment Health Physical Education Technology	Arts Community Living	Arts Social Science Making a Living	Arts Social Science Business Studies Applied Social Science Agriculture Design & Technology (Home Economics, Practical Skills, Computing, Rural Technology, Tourism)	Arts Music Drama Applied Social Science Economics Politics/Civics Geography History Business Studies Urban Technology Applied Technology Information Technology Rural Technology Computing
Language	Vernacular Language	Vernacular Language English	English Vernacular Language	English (Library) Hiri Motu Tok Pisin Vernacular & other Language	Language (Literature) Japanese Bahasa Mandarin Chinese Hiri Motu Tok Pisin
Mathematics	Cultural Mathematics	Mathematics	Mathematics	Mathematics	Mathematics Extension (A) Mathematics Core (B) Life Maths
Personal Development	Culture & Community	Health Physical Education	Health Physical Education Guidance Religious Education	Health Physical Education Guidance Religious Education	Personal Development (incl. Civics)
Science	Culture & Community	Environmental Studies	Science	Science Environmental Science Applied Science	Biology Chemistry Physics Applied Science

Source: National Curriculum Statement - 2002, Department of Education

Table 2-2 Teacher Education at the University of Goroka

	Course	Subject	Period	Requirement	Remarks
1	Ph. D.	Education	3-5	Masters Degree	Full time research
2	M. Ed. (Honors)	Education	1	Masters Degree	or part-time by Lahara
3	M. Ed.	Education	1	B. Ed. (Honors)	or part-time by Lahara
4	B. Ed. (Honors)	Education	1	B. Ed., P.D.E.	or part-time by Lahara
5	Postgraduate Diploma (PDE)	Education	1	Bachelors Degree	or part-time by Lahara
6	B. Ed. (In-service)	Education	2	Experienced teachers	or part-time
7	B. Ed. (Primary) (In-service)	Education	2	Experienced primary teachers	or part-time
8	B. Ed. (Pre-service)	Education	4	G-12 graduate, Matriculation	or part-time
9	Diploma in Agricultural Education	Agri. Education	1	Vocational qualification (Agr.)	(Pre-service)
10	Diploma in Business Studies Education	B.S. Education	1	Vocational qualification (B.S.)	(Pre-service)
11	Diploma in Expressive Arts Education	E.A. Education	1	Vocational qualification (E.A.)	(Pre-service)
12	Diploma in Health Education	Health Education	1	Professional health educator	(Pre-service)
13	Diploma in Teaching (Health)	Health Education	1	Vocational qualification (Health)	(Pre-service)
14	Diploma in Tech. & Voc. Education	T.V. Education	1	Vocational qualification (Technical)	(Pre-service)
15	Diploma in Teaching Physical Education	Physical Education	1	G-12 graduate (Science subject)	(Pre-service)

On the basis of the above given conditions, discussions were held with University officials to confirm the nature of the requested equipment and ensure that the following prerequisites were satisfied.

- The equipment must be indispensable for training teachers for education at the secondary level.
- The equipment must be such that the university cannot acquire it by means of its own ordinary budget.
- There is a suitable place for each piece of equipment.
- There is no duplication of equipment supply by another donor.
- There must be instructors and technicians capable of operating or using the equipment.
- It must be possible to judge the necessity of the equipment relative to the curricula, and documents describing practice and experiment plans, and so on.
- Furniture and the like not directly related to education are to be limited to storage cabinets for equipment.
- Pieces of equipment for preparation of teaching materials (printing machines, AV equipment, etc.) are to be limited to those at the level of being technically and economically easy to maintain.
- Pieces of office equipment for control functions are to be limited to equipment directly related to education, and it is to be assumed that such equipment shall be for joint use.
- Any equipment that is extremely costly, or very expensive to operate and maintain, can be included provided that the funds and personnel needed for the equipment are available.
- Consideration will be given to achieving a technical fit with existing equipment in the case of equipment that makes up part of a system.

As a result of examination of the above, the scope of cooperation to be provided by Japan for the development planning of the University was determined to be as shown in Table 2-3.

Table 2-3 Scope of Japanese Cooperation

Teaching Facilities

Faculty	Dept.	Section	Lab/Subject	Equipment		Security
				Educational	Admin.	
Education	Curriculum & Teaching	Curriculum & Teaching	Educational Technology	o		Good
	Educational Foundations	Educational Foundations	Educational Foundations	o		No *
Humanities	Expressive Arts & Religious Education	Expressive Arts	Drama	o		No *
			Music	o		Good
			Arts			-
		Religious Education	Religious Education			-
	Language & Literature	Language & Literature	Language & Literature	o	o	No *
	Social Science & Commerce	Social Science	Social Science	o	o	No *
Commerce		Commerce				
Science	Science, Agriculture & Health	Science	Chemistry Lab	o		Good
			Biology Lab	o		Good
			Physics Lab			-
		Agriculture	Agriculture	o		No *
			Model Farm	o		No *
		Health	Health			-
	Home Economics & Design and Technology	Home Economics	Clothing Lab	o		Good
			Food Lab	o		Good
		Design & Technology	Metal Workshop	o		Good
			Wood Workshop	o		Good
		Technical Vocational Education	Technology	o		Good
	Commerce				-	
	Mathematics & Computing	Mathematics & Computing	Computer Lab	o		Good
	Physical Education	Physical Education	Physical Education			-

Common Service Facilities

Title	Facility/Section	Equipment		Security
		Educational	Admin.	
Common Facilities	Multipurpose Theater (New)	o		Good
	New Library	o		Good
	AV Section	o		No *
	Printery Section	o		No *
	New Open Computer Lab	o		No *
	Open Computer Labs	o		No *
	New Lecture Room (Old Library)	o		No *
	Multipurpose Theater (Old)	o		No *
	Life Skills Center	o	o	No *
	PNG Journal		o	-
	Stand-by Generator	o		No *

(Note) "No \*" indicates rooms that need security grills and padlocks etc. to be fixed for security purpose.

For selection of the equipment that is to be provided under this Japanese grant aid project, the study employed the following basic guidelines.

a) Equipment having higher priority

- Equipment frequently used for experiments, practice and lectures
- Equipment for which the current supply is insufficient and additions are needed
- Equipment that must be replaced because of being out of date
- Equipment difficult to use on a joint basis with other departments
- Materials for experiments, parts, consumables etc. that are difficult to procure in PNG

b) Equipment outside the project scope

- Equipment for which there is no confirmation as to availability of a place to install it after new construction, renovation or structural improvement
- Equipment duplicated by cooperation of another donor
- Easily broken glass utensils and consumables, reagents, etc. that are quickly used up (except that those that are specific to planned equipment)
- Equipment that would be used for personal research
- Equipment for which anti-theft precautions are difficult
- Equipment requiring personnel for operation and maintenance the costs of which cannot be easily covered by budgets

(2) Design Policy

The following guidelines are adopted for use at the level of the design of the planned equipment and determination of equipment specifications.

- The equipment is to be suitable for use in a training program for secondary school teachers
- The equipment design is to be such that the technical, labor, and costs for operation, maintenance and management are manageable by the university
- Designs shall have been given consideration from the viewpoint of gender equality in their use
- Specifications are fundamentally to be international specifications provided that they are in compliance with PNG laws and regulations
- Spare parts and consumables (including glass utensils, reagents) are to be included with the equipment according to necessity
- Priority is to be given to spare parts and consumables that can be procured from an agent in PNG by payment in PNG currency
- A suitable period of guidance in operation and maintenance shall be provided by engineers dispatched by manufacturers after the equipment has been installed and the cost of this shall be included in the cost of each such piece of equipment
- An operation manual is to be included as part of each piece of equipment

Furthermore, it has been requested by the university that a soft component of the project be implemented under the direction of the Consultant prior to and after installation of the equipment. This request was studied taking into consideration the number and skills of the university's technical personnel and in connection with its probable contribution to smooth implementation of the project, and consequently has been included within the project scope. Details of the content of the plan are provided elsewhere in this report.

### (3) Policy for Implementing Assistance Activities

The equipment in the scope of this project is broadly separable into three categories as below.

- 1) Machinery and devices
  - Educational equipment (equipment for the lab. practical; agricultural equipment, machine tools, sewing machines, kitchen equipment, computers, tools, musical instruments etc.)
  - Equipment for supporting educational activities (AV equipment, lighting fixtures or equipment, computers, printing machinery, stand-by generator, etc.)
- 2) Educational materials and models (slides, videotapes, scale models, etc.)
- 3) Furniture (reading tables, chairs, book stacks, cabinets. etc.)

Much of the equipment would be imported; of the above only furniture is normally produced in PNG. Further, with the exception of ordinary tools and computers and the like there are not many pieces of equipment that are normally imported by PNG. Therefore, on the basis of discussions with PNG officials, it was agreed that the equipment to be procured would fundamentally be obtained from Japan and other sources, and when equipment could not be procured from Japan then acquisition from a third country could be used. The production period for the equipment is expected to range from one month to two months for the most readily available equipment to 4-5 months for printing machinery, machine tools and the like. In consideration of the overall project implementation schedule, equipment of such a grade as to be deliverable only after a period longer than 5 months is to be considered out of the project scope.

Full and proper operation instruction, for the university personnel in charge of operation, maintenance and management of equipment, is needed with regard to computers, AV equipment, printing machinery, machine tools and some of the laboratory equipment. This instruction and guidance would be provided in connection with installation and test operation by the contractor(s).

#### 2-2-2 Basic Plan (Equipment Plan)

Taking into account the results of discussions with PNG officials regarding the requested equipment, the following has been prepared as the Equipment Plan. Major features of the equipment and site of installation are as in Table 2-4. The results of detailed investigation of the contents of the request are shown in Table 2-5.

Table 2-4 Overview of the Planned Equipment

Code	No.	Category	Location	Purpose of use	Remarks
<b>A</b>		<b>Equipment for Multipurpose Lecture Theater</b>			
	1	Stage Lighting Equipment	(Old Theater for Common Use)	Practice (HEXA), performance	Sharing with K2
	2	Equipment for Presentation & Lecture	(Old Theater for Common Use)	Presentation, lecture	Sharing with K2
<b>B</b>		<b>Equipment for the New Library</b>			
	1	Stacks, Reading Table & Chair	New Library (GF, FF)	Common service	
	2	Furniture for Staff Offices and Rooms	-	-	Not included
	3	Computers	New Library (GF)	Common service	
	4	Equipment for Library Service	New Library (GF)	Common service	
	5	AV Equipment for AV Lounge	AV Lecture Room (FF)	Common service	
	6	Security System	-	-	Not included
<b>C</b>		<b>Equipment for AV Section</b>			
	1	Video Shooting for Student Practice & Academic Staff Use	(AV Store for Common Use)	Lecture, practice (ETE)	Sharing with C3
	2	Non-linear Video Editing & DTP System for Student/Academic Staff	(AV Store for Common Use)	Lecture, practice (ETE)	Sharing with C4
	3	Video Shooting for AV Section	AV Store (Old Library)	Producing teaching materials	
	4	Non-linear Video Editing & DTP System for AV Section	AV Store (Old Library)	Producing teaching materials	
	5	Tool & Instruments for Maintenance Work	AV Workshop (Meat Process Factory)	Maintenanc of equipment	Need room preparation
	6	AV Equipment for Common Use	Department Classrooms	Producing teaching materials	
	7	Recording & Distribution of Educational TV Program	AV Store (Old Library)	Producing teaching materials	
<b>D</b>		<b>Equipment for Printery Section</b>	New Printery (Meat Process Factory)	Producing teaching materials, etc.	Need site preparation
<b>E</b>		<b>Equipment for Language Laboratory (DLL)</b>	LL Classroom (FF, Main quadangle)	Lecture (HCOS, GLL)	
<b>F</b>		<b>Equipment for Educational Technology Section (DCT)</b>	AV Lecture Room (GF, Main Quadrangle)	Lecture, practice (ETE)	
<b>G</b>		<b>Equipment for Computer Laboratories</b>			
	1	New Open Computer Laboratory	Conference Room (FF, Main Quadrangle)	Student study	For female use
	2	Teaching Computer Laboratory (DMC)	TCL (FF, Main Quadrangle)	Lecture, practice	Not included
	3	Male Open Computer Laboratory	MOCL (FF, Main Quadrangle)	Student study	Not included
	4	Female Open Computer Laboratory	FOCL (FF, Agri Commerce Building)	Student study	Not included
	5	IT Room	IT Room (GF, New Library)	IT system management	
<b>H</b>		<b>Equipment for Music Section (DEARE)</b>			
	1	Music Instruments	GF, FF, Music House	Lecture, practice	
	2	Music Composition	FF, Music House	Lecture, practice	
	3	Peer Teaching	(AV Store for Common Use)	Lecture, practice	Sharing with B5, K1
<b>I</b>		<b>Equipment for Agriculture Section (DSAH)</b>			
	1	General Laboratory Equipment	Agriculture Lab (Old Library)	Practical	
	2	Equipment for Soil Science & Plant Measurement	Agriculture Lab (Old Library)	Practical	
	3	Laboratory Glasswear	-	-	Not included
	4	Laboratory Consumable	-	-	Not included
	5	Equipment for Lecture & Practical Presentation	(AV Store for Common Use)	Lecture	Sharing with B5, K1
	6	Model Farm Equipment & Facilities	New Model Farm	Practical	Need site preparation
<b>J</b>		<b>Equipment for Science Section (DSAH)</b>			
	1	Measuring Instruments	Chemistry Lab (GF, Science Building)	Practical	
	2	Analytical Instrument	Chemistry Lab (GF, Science Building)	Practical	
	3	Chromatography & Electrophoresis	Chemistry Lab (GF, Science Building)	Practical	
	4	General Instrument	Chemistry Lab (GF, Science Building)	Practical	
	5	Safety Equipment	Chemistry Lab (GF, Science Building)	Practical	
	6	Analytical Instrument	Chemistry Lab (GF, Science Building)	Practical	
	7	Dissecting Tools	Biology Lab (GF, Science Building)	Practical	
	8	Microscope & Optical Instruments	Biology Lab (GF, Science Building)	Practical	
	9	Microbiology & Tissue Culture	Biology Lab (GF, Science Building)	Practical	
	10	Educational Media	Biology Lab (GF, Science Building)	Practical	
	11	Models	Biology Lab (GF, Science Building)	Practical	
	12	Models	Chemistry Lab (GF, Science Building)	Lecture	
	13	General Equipment	(AV Store for Common Use)	Practical	Sharing with B5, K1
	14	Glasswear	-	-	Not included
	15	Glasswear & Other	-	-	Not included
	16	Consumable for Tissue Culture	-	-	Not included
	17	Consumable	-	-	Not included
<b>K</b>		<b>Equipment for Other Lecture &amp; Classrooms</b>			
	1	New Lecture Room	Old Library	Lecture	For common use
	2	Old Lecture Theater	Old Lecture Theater	Lecture, practice	For common use
	3	Classrooms in the Departments	DEF, DHEDT, DMC, DSSC	Lecture	For common use
	4	Life Skills Center	Life Skills Center	Lecture	
<b>L</b>		<b>Equipment for Design &amp; Technology Section (DHEDT)</b>			
	1	Metal Workshop	Metal Workshop (D&T Building)	Workshop practice	
	2	Wood Workshop	Wood Workshop (D&T Building)	Workshop practice	
<b>M</b>		<b>Equipment for Home Economics Section (DHEDT)</b>			
	1	Clothing Laboratory	Clothing Laboratory (Arts & Home Economic Bldg)	Practical	
	2	Food Laboratory	Food Laboratory (Arts & Home Economic Bldg)	Practical	
<b>N</b>		<b>Equipment for Technical Vocational Section (DHEDT)</b>			
	1	Lathe and Milling Machines	TVE Workshop Building	Workshop practice	
	2	Plumbing Trade	TVE Workshop Building	Workshop practice	
	3	Carpentry Trade	TVE Workshop Building	Workshop practice	
	4	Metal Fabrication & Welding	TVE Workshop Building	Workshop practice	
	5	Automotive Electrical	TVE Workshop Building	Workshop practice	
	6	Motor Mechanic	TVE Workshop Building	Workshop practice	
<b>O</b>		<b>Office Equipment</b>			
	1	Dept. of Social Science & Commerce	-	-	Not included
	2	Dept. of Language & Literature	-	-	Not included
	3	Life Skills Center	-	-	Not included
	4	PNG Journal of Teacher Education Room	-	-	Not included
<b>P</b>		<b>Other (Stand-by Generator)</b>	Generator Shed	Alternative power source	