

CHAPTER 3 CONTENTS OF THE PROJECT

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3.1 Overall Objectives

While the level of education in Sri Lanka is fairly high in terms of the school enrolment ratios and literacy rate, the quality of education is still low with the result that education has failed to become the driving force of economic development. The qualitative improvement of education is, therefore, an urgent task in order to achieve the socio-economic development of Sri Lanka.

Although the NIE intends a qualitative improvement of both primary and secondary education in Sri Lanka, its short history and the shortage and deterioration of its facilities and equipment, coupled with a manpower shortage, have made the expansion of the NIE's activities impossible. The Government of Sri Lanka has, therefore, prepared the NIE Expanding Project to provide the training and research facilities and equipment required for the expansion and consolidation of the NIE's activities.

3.2 Examination of the Request

3.2.1 Suitability and Necessity of the Project

Since the establishment of the NIE in 1986, its deficient facilities and equipment, shortage of staff, and lack of systematic linkage among its divisions have greatly restricted its training and research activities. The need for expanding its facilities and equipment under this Project is therefore considered high. Although there is a shortage of facilities and equipment, the staff potential is very high. The future activity plan of the NIE based on its performance since its establishment appears fairly realistic in terms of the eventual creation of high quality teaching materials, efficient research and training activities, efficient dissemination of research results and a qualitative improvement of personnel in the educational system.

The extensive renovation of the facilities and equipment following the implementation of the Project will have considerable direct and indirect effects on education in Sri Lanka in addition to the significant improvement of the NIE's various functions. The NIE has been implementing its own expansion programme since its establishment 2 years ago and has at last begun to emerge as a unified educational organization. It is, therefore, believed that the implementation of the Project at this time would greatly benefit the development of the NIE.

In view of the past building construction budgets of the NIE of 0.5 million Rs in fiscal 1986, 8 million Rs in fiscal 1987 and 25 million Rs in fiscal 1988, totalling 33.5 million Rs (approximately 134 million yen), it is believed that the provision of the facilities and equipment planned in the Project by the NIE's own budget will be difficult. Therefore, the provision of the grant assistance of the Government of Japan is also deemed necessary from this view-point.

The Sri Lankan side considers the following necessary functions of the NIE essential to achieve the NIE's objective.

- (1) Provide for the professional growth of personnel in the education system.
- (2) Carry out research studies, particularly in the area of policy so as to be able to "advise the Minister regarding plans, programmes and activities for the development of education in Sri Lanka.
- (3) Design and develop curricula for the entire school system.
- (4) Promote research studies in education.
- (5) Establish links with other similar institutes, local and foreign.

The appropriateness and necessity of these functions are discussed below.

- (1) Provide for the professional growth of personnel in the education system

The personnel involved in education are largely classified into educational administrators and teachers and the former is comprised of personnel employed in Department and Institutions under the MOE and school principals and deputy principals. As a qualitative improvement of education is only possible with the efficient operation of schools in addition to high quality teachers, the improvement of the school management knowledge, skills and competencies of educational administrator is essential to improve the quality of education.

The educational management training provided by the Staff College for Educational Administration is deemed appropriate as it intends the improvement of the management knowledge, skills and competencies required for the efficient management of education and the promotion of the application of this knowledge, etc. The College also conducts practical research on efficient educational organizations and on solutions to educational problems and it is believed that the reflection of these research results on the course contents will result in more effective training courses.

Teacher training is currently conducted by the Institute of Distance Education and the Institute of Teacher Education. While the Government of Sri Lanka intends the recruitment of qualified graduates of colleges of education or ordinary universities as new teachers in the future, some 37% of the present primary and secondary school teachers lack professional teacher training. As a qualitative improvement of these un-trained teachers in service will automatically improve the general educational level, teacher training is essential for a qualitative improvement of Sri Lankan education. The training of teachers and other staff for English, aesthetic and special education is also conducted by the relevant sections of the NIE.

The Sri Lankan objective to increase the number of capable educational administrators and teachers is deemed appropriate in view of improving the quality of education in Sri Lanka.

Also, the training courses planned under this Project contain substances intended for the developmental expansion of training offered by the NIE since its establishment in 1986 and in this context, too, the plan can be judged as appropriate.

- (2) Carry out research studies, particularly in the area of policy so as to be able to "advise the Minister regarding plans, programmes and activities for the development of education in Sri Lanka"

Decisions on national educational policies are extremely important in that they determine the future course of the country's education and arbitrary decisions are not only unfeasible but are also risky. Decisions on educational policies should be based on research studies on and evaluation of past policies and programmes, etc., case studies on foreign examples, studies on policy coordination with national policies in other fields and research on social requirements, etc. Research studies is therefore, essential for decisions on national educational policies. Moreover, research studies is also necessary for decisions on annual plans, programmes, activities for the development of education.

Research on educational policies at the NIE is mainly conducted by the Research Section and the research results are combined with the research results of other sections and the evaluation results of activities of the Academic Affairs Board and special committees assisted by the Secretarial and General Services Section. As a well coordinated system to conduct

academic and educational research is feasible with the expansion of the NIE's facilities and manpower and the establishment of strong links between the different divisions and sections, the Sri Lankan emphasis on the NIE's improved research function is deemed appropriate.

(3) Design and develop curricula for the entire school system

In addition to high quality teachers and improved school facilities, the development of the proper curricula is essential for the efficient management of the school education system and both a qualitative and quantitative improvement of education. Since Sri Lanka has mainly aimed at achieving equal educational opportunities for its rapidly increasing population, curriculum design and development to improve the quality of education have lagged behind.

The Curriculum Design and Development Centre which is involved in the preparation of curricula and teaching materials for primary and secondary education and in relevant research and development activities has been integrated to the NIE together with the establishment of the Educational Technology Division which is involved in the development of new teaching materials. With the expansion of the NIE's facilities and manpower and the establishment of strong links between these 2 divisions, the achievement of an effective curriculum design and development function is feasible and, therefore, the Sri Lankan emphasis on this function is deemed appropriate.

(4) Promote research studies in education

Prior to the establishment of the NIE, research studies on primary and secondary education was conducted by various organizations and comprehensive research studies and practical research studies was almost non-existent. The establishment of the NIE has, therefore, made comprehensive and practical educational research possible.

While the preparation of the annual research plan by the Research Section is intended with practical research studies being conducted by the Staff College for Educational Administration, the Institute of Teacher Education, the Curriculum Design and Development Centre and the Educational Technology Division, etc., little research has yet been conducted due to the shortage of facilities, equipment and manpower and also due to the lack of coordination between these divisions, in turn reflecting the short history of the NIE. With

the establishment of strong links between the above following the Project's completion, however, the active implementation of educational research is believed feasible.

The main research conducted by the NIE can be classified in the following categories.

- ① research to improve the quality of educational administrators and teachers
- ② research on and development of curricula and teaching materials
- ③ research to assist educational policies and to prepare the NIE's annual plans

Research in the first category includes research on efficient educational management, that on solutions to educational problems and that on teacher education and, therefore, is of a practical nature vis-a-vis training related to education.

Research in the second category is conducted on such new subjects as computer and audio-visual education in addition to research on conventional subjects in view of developing appropriate curricula and teaching materials. As such, this research is also of a practical nature in terms of improving the educational effects.

Research in the third category is essential to decide both the short-term and long-term activity plans of the NIE.

All the above types of research must be urgently implemented to achieve a qualitative improvement of primary and secondary education in Sri Lanka.

(5) Establish links with other similar institutes, local and foreign

Information exchange and technical exchange with similar institutes are essential for the NIE to efficiently conduct training and research. As research on education in Sri Lanka commenced only recently because of the emphasis on a quantitative expansion of education in the past, the collection of information, including the results of foreign research, is urgently required to promote educational research in Sri Lanka.

Table 3-2-2 Expansion of Manpower of NIE

Personnel Category	Present											1988 Plan													
	Academic Staff						Non-Academic Staff					Academic Staff						Non-Academic Staff							
	D.G	A.D.G	Dir.	C.P.O	P.O	A.P.O	PA	Typist	T.S	Others	Total	D.G	A.D.G	Dir.	C.P.O	P.O	A.P.O	PA	Typist	T.S	Others	Total			
1. Professional Development of Educational Personnel (S-Total)			5	27	40	23	13	9	2	27	146			1	5	31	75	56	168	16	15	5	42	78	246
Assistant Director General Office														1											
1. Staff College for Educational Administration			1	9	5		2	5	1	11	34			1	9	17	1	1	3	1	1	1	1	3	6
2. Higher Institute for English Education			1	5	2		1			2	11			1	5	4	3	13	2	2			7	11	24
3. Institute of Distance Education			1	5	20	12	5	2		5	50			1	5	26	20	52	4	3	2		7	16	68
4. Institute of Teacher Education (Special Education Resource Center)			1	6	10	6	3	2		3	31			1	8	13	11	33	4	3		5	12	45	
5. Institute of Aesthetic Education			1	2	3	5	2		1	6	20			1	4	14	20	39	2	3	1	10	16	55	
2. Curriculum Design and Development (S-Total)			1	4	15	35	6	7		9	127			1	4	21	63	46	135	7	10	12	17	46	181
Assistant Director General Office			1								2			1					2						
1. Primary Education			1	5	9	11	1	1		2	30			1	5	10	15	31	2	3			3	8	39
2. Language, Religion and Social Studies			1	4	15	11	2	2		2	37			1	6	20	13	40	2	3			2	7	47
3. Science and Mathematics			1	4	19	6	2	2		4	38			1	5	22	8	36	2	3	11	7	23	59	
4. Technical Education			1	2	7	7	1	1		1	20			1	5	10	10	26	1	1	1	1	1	4	30
3. Educational Technology (S-Total)			1	2	1	10	3	2	1	8	38			1	4	9	16	12	42	10	5	22	22	59	101
Assistant Director General Office			1								1			1					2	1	1			3	5
1. Library and Documentation			1		3	2	1	1		2	10			1	2	4	3	10	1	1	2	5	9	19	
2. Computer Education						5	2		1	2	13			1	3	2	5	11	2	1	3	3	9	20	
3. Audio Visual Media Center			1			3				2	12			1	3	5	4	13	2	1	3	8	14	27	
4. Publication										2	2			1	1	4		6	4	1	14	5	24	30	
4. Administration and Finance (S-Total)			1	3	1	1	1	39	7	4	17	74		1	4	1	2	1	9	42	8	2	35	87	96
Assistant Director General Office			1								1			1				1					15	15	
1. Finance			1				22			5	28			1				1	22	2			7	31	32
2. Administration			1				12	5		7	25			1				1	16	5		7	28	29	
3. External Services						1	4	1		1	8			1	1	2		4	1	1		1	3	7	
4. Engineering Services			1	1			1	1	4	4	12			1				1	2		2	5	10	11	
5. Secretarial and General Services (S-Total)			1	1	1		2	2		5	12			1	3	1	7	6	2			12	20	27	
6. Planning (S-Total)			1	1	1		1	1		1	6			1	1	1	1	4	1	2		1	4	8	
7. Research (S-Total)			1	5	3	2	1	2		3	17			1	6	5	3	16	2	3		3	8	24	
8. Evaluation (S-Total)			1	2	3	7	1	2		2	18			1	2	2	3	9	17	3	4		3	10	27
Total	1	3	18	53	108	78	66	32	7	72	438	2	5	21	72	169	129	398	87	49	41	135	312	710	

The Research Section and Planning Section of the NIE both intend to establish their links with similar institutes, local and foreign. As this intention can be readily put into practice with the consolidation of the NIE under the Project, the Sri Lankan emphasis on this function is deemed appropriate.

3.2.2 Examination of Personnel and Budget Plans

(1) Personnel Plan

The NIE plans to increase its current personnel of 438 to 710 in fiscal 1989 in accordance with the implementation of the Project. Table 3-2-2 shows the current manpower strength of each division and the manpower strength following the planned increase.

- Academic staff 216 → 398 persons
 - executive staff 22 → 28 (with an addition of 6 persons)
 - project officer 239 → 370 (with an addition of 131 persons)
- Non-academic staff 177 → 312 persons
 - technical staff 7 → 41 (with an addition of 34 persons)
 - others 170 → 271 (with an addition of 101 persons)

The NIE has been recruiting the above mentioned additional staff since the end of 1988, and has unofficially decided to employ 87 additional academic staffers in April, 1989. The NIE has clearly stated that it will complete employment of the remaining academic staffers and additional non-academic staffers by the time the facilities under this expansion project are completed, which is considered possible. The 87 academic staffers whose employment has already been decided are government officials recruited primarily from the MOE who applied for the positions, and the NIE has already secured 3,681,000 Rs as salaries for these newly employed staffers in its fiscal 1989 budget.

(2) Budget Plan

The Government of Sri Lanka, which gives priority to education, strongly recognizes the importance of the NIE's role in Sri Lankan education and the positive effects of expanding the NIE and has annually increased the NIE's budget as shown in Table 3-2-3. While the size of the NIE's budget following the completion of the Project is obviously unclear at present, the NIE plans 155 million Rs in fiscal 1990, 194 million Rs in fiscal 1991 and a 200% increase on its fiscal 1988 budget in fiscal 1992 (225 million Rs). As the NIE has

Table 3-2-3 Annual Budget of NIE (Fiscal Year 1987~1995)

(Unit:Rs)

Division Name	Fiscal Year									
	1987	1988	1989	1990	1991	1992	1993	1994	1995	
1. Professional Development of Educational Personnel	30,441,895	29,169,775	37,942,000	41,736,200	64,488,746	77,577,043	100,619,580	112,650,032	133,854,906	
2. Curriculum Design and Development	23,703,395	11,959,730	14,595,000	16,054,500	24,708,083	33,235,136	28,223,950	34,915,001	33,366,963	
3. Educational Technology	4,527,844	4,879,001	6,462,000	7,108,200	7,244,883	7,854,397	8,391,224	9,083,971	9,829,679	
4. Evaluation	-	2,686,123	8,000,000	8,800,000	9,778,410	10,352,385	10,946,873	11,508,638	12,367,674	
5. Administration and Finance	1,684,934	6,440,324	10,962,000	12,058,200	9,240,155	10,236,578	10,689,951	11,760,815	12,660,640	
6. Secretarial and General Services	1,683,182	1,556,657	2,078,000	2,285,800	2,852,053	2,865,268	2,898,222	3,252,802	3,731,071	
7. Planning (includes Research)	76,450	572,382	924,000	1,016,400	1,586,123	1,803,360	2,074,672	2,509,038	3,139,847	
8. Research	15,000,000	49,000,000	56,000,000	61,600,000	67,760,000	74,536,000	81,989,600	90,188,560	99,207,416	
9. Capital Budget of the Institute	77,005,250	108,981,156	141,000,000	155,100,000	193,527,685	224,895,342	252,901,764	283,715,568	316,837,878	
Total Budget										

expressed its strong intention to secure this planned budget size in the future, it is believed that the financial requirements for the NIE's future operation will be sufficiently met.

3.2.3 Examination of Possible Overlapping with Other Assistance Projects

As described in 2-3-4, the NIE is currently receiving assistance from the SIDA, British Council, UNDP, UNESCO, UNICEF and JICA, etc. Most of the assistance projects are training and research programmes to improve the quality of the NIE's activities through technical cooperation and the provision of facilities and equipment is mostly conducted by the SIDA in terms of primary school construction in specific districts and equipment provision for specific divisions of the NIE. There is no overlapping between the ongoing assistance projects and the present Project which intends the provision of a significant amount of facilities and equipment for the substantial expansion of the NIE's activities.

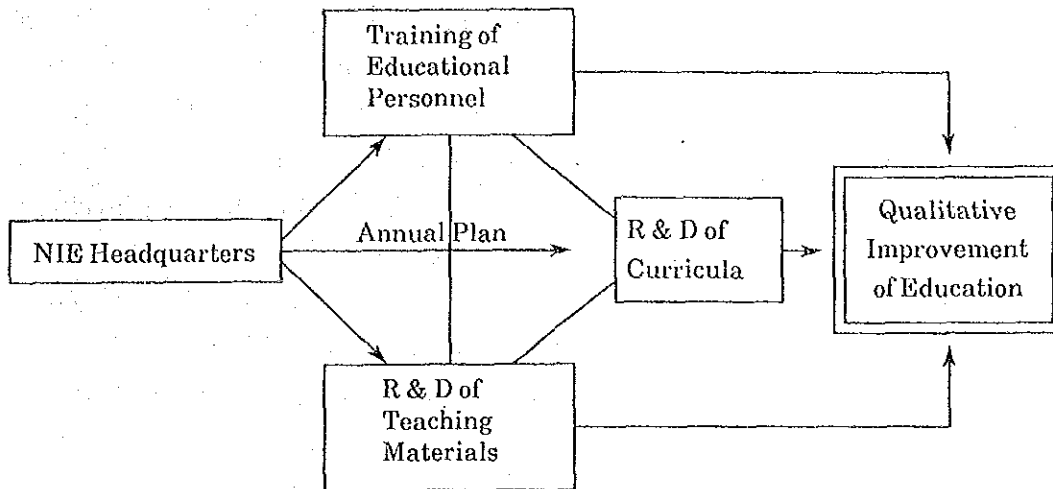
3.2.4 Examination of Project Components

The NIE basically performs 3 functions, i.e. the training of educational personnel, the research and development of curricula and the development of teaching materials. These functions are well connected to each other in terms of improving the quality of education and the lack of one of these functions would result in the NIE's failure to achieve its objective. Concrete activities under these functions must be decided in a comprehensive and systematic manner to maintain the organic links between the functions. In this context the NIE Headquarters consisting of the Planning Section which is responsible for decisions on annual activity plans, Research Section and Secretarial and General Services Section, etc., also plays an important role in the operation of the NIE.

Table 3-2-5 Present and Expansion Plan for Facilities Function of NIE

Facilities Function	Location			Final Request	Location			
	Present				Expansion Plan			
					Ma		Co	Me
	Grant Aid	Existing Facilities Use						
1. Professional Development of Educational Personnel								
①. Staff College for Educational Administration	○			○	●			
②. Higher Institute for English Education		○					○	
③. Institute of Distance Education	○			○	●			
④. Institute of Teacher Education (Special Education Resource Centre)	○			○	●			
⑤. Institute of Aesthetic Education			○					○
2. Curriculum Design and Development								
①. Primary Education	○			○		○		
②. Language, Religion and Social Studies		○		○		○		
③. Science and mathematics	○			○		○		
④. Technical Education	○			○		○		
3. Educational Technology								
①. Library and Documentation	○			○	●			
②. Computer Education		○			●			
③. Audio Visual Media Centre		○			●			
④. Publication	○			○	●			
4. Evaluation		○		○		○		
5. Administration and Finance								
①. Finance	○			○		○		
②. Administration	○			○		○		
③. External Services	○			○	●			
④. Engineering Services	○			○		○		
6. Secretarial and General Services (incl D.G, DGG Office)	○			○	●			
7. Planning	○			○	●			
8. Research	○			○	●			
9. Science Laboratories	○			○	●			
10. Workshops				○	●			
11. Training Rooms	○			○	●			
12. Auditorium				○				
13. Canteen	○			○		○		
14. Dining/ Kitchen	○			○		○		
15. Trainees' Hostels	○			○		○		
16. Staff Residence	○			○		○		

Location : Ma-Maharagama, Co-Colombo, Me-Meepe



3.2.5 Examination of Requested Facilities and Equipment

(1) Facilities

The Project for Expanding the National Institute of Education, as stated previously, intends to achieve the NIE's purpose of promoting the development of education by expanding the facilities and equipment which are short, increasing the number of personnel and converging NIE's scattered facilities at Maharagama as far as possible and also expand the content of NIE's entire activities by strengthening systematic linkage among its divisions.

The content of facilities and functions of the final request of the Sri Lankan side presented at the time of the basic design study on the basis of the Project for expanding the NIE is as shown in Table 3-2-5. Of the NIE's facilities and functions, the four facilities and functions of the Higher Institute for English Education, the Institute of Aesthetic Education, the Computer Education Section, and the Audio Visual Media Centre were not included in the request. This is because the facilities of the Higher Institute for English Education on NIE's Colombo Campus and of the Institute of Aesthetic Education on its Meepe Campus are both relatively new and provided with adequate space and equipment, so that the Sri Lankan side excluded them from the request at the time of formulating the project for expanding the NIE in order to give priority to other facilities and functions whose relocation to the Maharagama Campus is more urgently required, although the former two institutes will also be relocated to Maharagama sometime in the future.

The Computer Education Section and the Audio Visual Media Centre are deficient in both facilities and equipment, but as their activities are supported by the use of other facilities and equipment that exist in Colombo, they must be kept in Colombo for the time being in order to maintain their activities, and so, they were excluded from the request. However, since the Computer Education Section and the Audio Visual Media Centre are the technical functions that support training, teaching material development and educational research, and they would function more effectively if located in Maharagama, it was decided as a result of consultation and study with the Sri Lankan side that they should be relocated to the Maharagama Campus.

After a study as outlined above, the Computer Education Section and the Audio Visual Media Centre were added to the final request, and the facilities and functions requested were examined. Every one of them are considered important and worthy of assistance from the viewpoint of promoting the development of education in Sri Lanka through training and development of teachers, development of curriculum and teaching materials and establishment of the educational system to be attained by expanding the activities of the NIE whose objectives are training, development, research and evaluation. However, as a number of buildings already exist on the NIE's Maharagama Campus, discussions were held to examine which of the facilities should be covered by the grant assistance of Japan with due consideration to the possibility of utilizing some of those existing buildings or utilizing them after making some improvements or constructing new ones with the self-help effort of the Sri Lankan side.

Of the Professional Development of Educational Personnel Division, the Staff College for Educational Administration which develops educational management personnel, and the Institute of Distance Education and the Institute of Teacher Education which trains un-trained teachers have a direct bearing on improvement of scholastic achievement by pupils and are therefore the most urgently needed of all activities currently undertaken by the NIE, so that they are judged to have high priority as the objects of assistance.

On the Curriculum Design and Development Centre, most of its existing buildings are in use, some of which are currently undergoing improvement work. When the other divisions which share the same existing buildings move out, the Centre will have exclusive use of those buildings. As the total floor area of those existing buildings will become large enough for the intended

activities of the Centre, the Centre's facilities were excluded from the objects of assistance. However, the science laboratories for chemistry, physics and biology necessary for training of teachers and developing of curriculum are already unable to cope with the contents of training which have been upgraded, and their facilities which have deteriorated and the equipment which are remarkably damaged cannot withstand further use. For the homemaking course, etc., facilities of the Teachers' College in the suburbs have to be rented because NIE has no practice room. Since the Curriculum Design and Development Centre is located nearby the Project site, laboratories and practice rooms can be used jointly with other divisions for training and research when their construction is incorporated in this Project. Hence, science laboratories and practice rooms were taken up as the objects of assistance.

The Library and Documentation Section, Computer Education Section, Audio Visual Media Centre, and Publication Section of the Educational Technology Division are the technical functions supporting educational training and research. As the content of equipment of these sections will govern the content of NIE's activities, and the activities plan is judged unattainable with the existing content of equipment, their expansion is considered essential. Since there is no existing facility to accommodate the expanded equipment, the facility was also made the object of assistance.

The Evaluation Division which is now located in Colombo is planned to be relocated to Maharagama. Nationwide examinations for evaluating the learning achievement level which are currently implemented by the Department of Examination of the MOE is scheduled for transfer to the Evaluation Division sometime in the future, but in view of the degree of urgency of other current activities, the expansion of this Division was given low priority and excluded from the objects of assistance.

The Secretarial and General Services Section, Planning Section and Research Section which jointly comprise the NIE Headquarters are the pivotal center of NIE which orients and determines its activities plan, and in view of their functional role, it is desirable to locate them near each of the other divisions. As they also represent the NIE vis-a-vis outsiders, too, they were made the objects of assistance.

The Administration and Finance Division which does not require any special equipment was excluded from the objects of assistance since it can be

adequately expanded by the use of existing facilities. However, it was decided that its External Services Section should be attached to the NIE Headquarters functions as the Section deals with the acceptance of foreign aid and its duties can only be achieved by closely coordinating with other NIE Headquarters functions such as its Planning Section.

The Auditorium was excluded from the objects of assistance since its scale, purpose and frequency of use and other supporting data were not clear enough, although the need for it can be recognized.

Peripheral facilities including trainees' hostels were excluded from the objects of assistance since some of them are currently under construction and it was judged that most of them can be constructed by the Sri Lankan side without any outside help.

Based on the foregoing discussion and scrutiny, the scope of the grant assistance has been determined as follows. (A part or all of the following facilities.)

- 1) Professional Development of Educational Personnel Division
 - ① Staff College for Educational Administration
 - ② Institute of Distance Education
 - ③ Institute of Teacher Education (including Special Education Resource Centre)
- 2) Educational Technology Division
 - ① Library and Documentation
 - ② Computer Education
 - ③ Audio Visual Media Centre
 - ④ Publication
- 3) Administration and Finance
 - ① External Services
- 4) NIE Headquarters
 - ① Secretarial and General Services (including Office of the Director-General and the Deputy Director-General)
 - ② Planning
 - ③ Research

5) Other Related Facilities including :

- ① Training rooms
- ② Workshops
- ③ Seminar room

However, expansion of the NIE Maharagama Campus would not be completed by the provision of the foregoing facilities alone. It is only when the Curriculum Design and Development Centre, Evaluation Division, Administration and Finance Division, trainees' hostels and staff residences and other facilities as shown in Fig. 3-2-5 which have been excluded from the objects of assistance have been clustered around the foregoing facilities by utilizing the existing facilities on the Maharagama Campus or other wise that systematic linkage can be strengthened among NIE's various divisions and NIE's activities expanded.

(2) Equipment

Such equipment related to research and training activities of NIE.

1) Institute of Teacher Training (including Special Education Resource Centre)

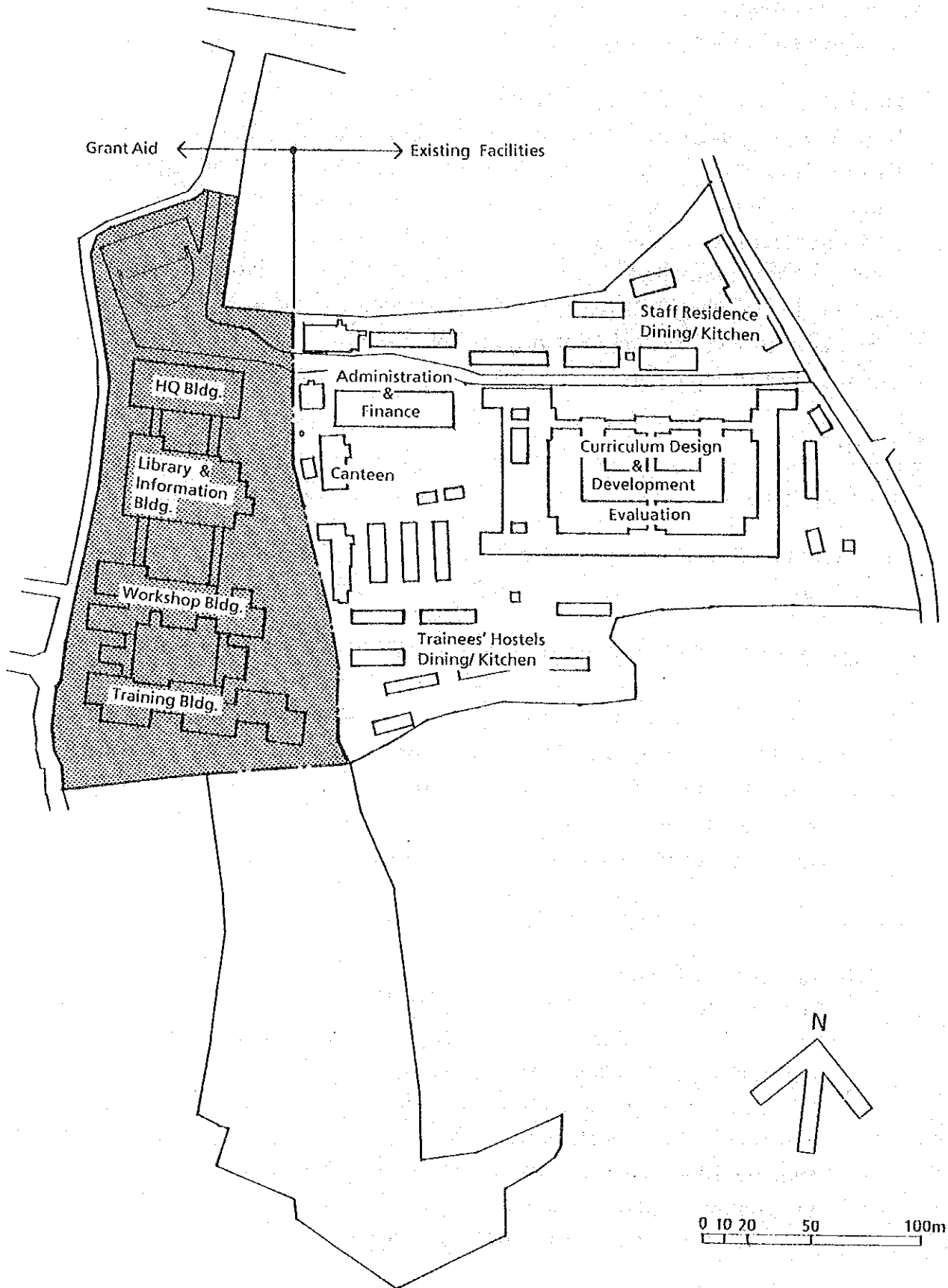
Both Japan and Sweden are currently providing technical assistance in the field of special education and some testing equipment has already been provided. As clinical and practical training and research are essential in this field, a video system to monitor behaviour, equipment to observe reactions to sound and light, etc. and a series of testing equipment should be provided for the training conducted at the Institute to directly improve the diagnosis ability of teachers.

2) Educational Technology Division

① Library and Documentation

At present, the library has some 60,000 books and an additional 20,000 - 25,000 books is planned in fiscal 1989. While it is planned to increase the number to 400,000 in the future, it was judged appropriate to plan the scale of the library on the assumption that the realistic annual addition to the book stock would be 10,000 books in and after 1990 and that by 1996, a book stock of around 150,000 books is realistically attainable. Open stacks will be used to house 30% of the books to achieve efficient use of the library space. The provision of equipment

Fig. 3-2-5. NIE Maharagama Expansion Plan : Facility Function



relating to audio-visual booths will also be required to provide individual access to the audio-visual materials produced by the Audio-Visual Media Centre.

② Computer Education

Computer training is currently conducted at the Colombo Campus using 11 personal computers. In view of Sri Lanka's stress on mathematics and science, the introduction of computer education is planned to further emphasise these subjects. In addition, the introduction of CAI (Computer Assisted Instruction) in the near future is under consideration in line with the worldwide trend of education and the provision of the relevant training course is planned.

Training at present mainly deals with computer operation. The 11 personal computers in use are on loan from the MOE and, therefore, the establishment of the NIE's own computer training room as part of the Project is highly significant. The personal computers requested by the Sri Lankan side should meet the present requirements and the provision of a mutual communication type laboratory system which enables the instructor to hold computer dialogues with trainees is preferable in view of more efficient and effective training.

③ Audio Visual Media Centre

The Audio Visual Media Centre on the Colombo Campus currently has a simplified editing system with 3/4 inch low band video equipment but does not have a studio. The Centre has so far produced 48 volumes of teaching videos for 7 science subjects. Actual production of the video tapes is conducted at the neighbouring Rupabahini Broadcasting Station due to the Centre's lack of equipment. However, it is becoming increasingly difficult to borrow the Station's equipment. In addition, as copies of the video teaching materials produced by the NIE will be distributed to some 450 schools all over the country, the original tapes must be of a high standard (3/4 inch high band or higher). The provision of a video studio for the NIE is, therefore, deemed necessary to promote the efficient production of video teaching materials in order to respond to the strong demand from various divisions of the NIE.

While each equipment requested is justifiable, every one of them is merely an addition to the existing equipment and, in substance, they are not enough to cope with the future activities plan. In order to carry out the activities plan as planned, it is necessary to have a systematic studio facility.

Furthermore, teachers' colleges and colleges of education at various places have opened audio-visual training courses with the main theme of teaching the method for preparing their own video teaching materials, and as they stand now, every college is fairly active in training even though they are poorly equipped. It is also an important function of the Audio Visual Media Centre to support those training courses, for which it is necessary to have a few small video cameras and other equipment which can be loaned to those colleges as necessary upon their request. It is quite significant for the Audio Visual Media Centre to have such a system for supporting outside educational fields in popularizing and establishing audio-visual education among the educational circles of Sri Lanka in the future.

④ Publication

Printed matters published by the NIE currently can be classified into two categories, which are, magazines, digests, and study reports published by each division and textbooks for training, manuals for teachers and the like. The former are printed by the small rotary press (of the table top type) owned by each division, and the printing of the latter is contracted out since their number of pages and of volumes are quite substantial. As printing requires a long time in Sri Lanka where the printing industry is still underdeveloped, a five-year stock of every publication must be ordered in one lump which requires quite a huge space for storing them. These textbooks for training and teacher's manuals ought to be printed within the NIE so that they can be easily revised. If printing of all publications within the NIE were made possible under this Project, it would become a lot more easier to revise them and improve training effect and also reduce the required storage space, which in turn would make it possible to utilize the space of facilities more efficiently. At present, the NIE has five A3 type offset printers which had been provided by the British Council Consultants and SIDA (2 sets in Colombo and 3 sets in Maharagama), but they are hardly in operation due to lack of such peripheral equipment as plate making machines and book binders. It is therefore necessary to converge all small rotary presses owned by each division, offset printers and the necessary peripheral equipment at Maharagama Campus and establish a printing and copying centre to enhance the printing capacity of the NIE as a whole.

3) Other Related Facilities

① Laboratories

Laboratories are required to conduct science experiment programmes as part of the training courses in view of the efficient utilization of the achievements of the Curriculum Design and Development Centre. Two Laboratories will be provided for 3 fields, i.e. physics, chemistry and biology, and the relevant equipment will also be provided on the basis of the Sri Lankan standard for school equipment. However, as this standard is inadequate in terms of equipment variety and experiments for the training of teachers for Collegiate course, additional equipment will be provided to satisfy the standard suggested by the Science Education Promotion at Senior High Schools Act in Japan.

② Workshops

As the NIE has no facilities for a domestic science course, the relevant training borrows the facilities of a nearby teachers' colleges. The construction of a domestic science workshop and a handicraft workshop is, therefore, necessary to efficiently conduct training in these fields.

The requested equipment relating to the domestic science workshop appears reasonable for activities plan. Some equipment requested for the handicraft workshop, including a plastic injection moulder, is not directly related to the NIE's activities but to vocational training and, therefore, has been excluded from the assistance list.

The request by the Audio-Visual Resource Centre for a workshop to produce low cost teaching materials has also been dropped as the equipment for the handicraft workshop can be commonly used.

3.2.6 Examination of Necessity for Technical Cooperation

As well as the implementation of the Project, the Government of Sri Lanka has also requested the Government of Japan's provision of technical cooperation.

In view of the fact that the provision of facilities and equipment under the Project will be insufficient for the NIE to successfully perform its function as the central organization for the improvement of education in Sri Lanka, technical cooperation is required for the maximum utilization of the provided facilities and equipment. Japan is currently providing the NIE with a JICA expert and a JOCV member and consequently has experience in this type of technology transfer.

While the provision of technical cooperation in terms of advice on the use of equipment, including computers, is relatively simple, however, Japanese experts on achievement test paper preparation and achievement test result analysis may not be readily available given the fact that university admission and pupil achievement evaluation systems in Sri Lanka are based on British systems. Therefore, the contents of the technical cooperation should be carefully examined by individually assessing the requested items and the availability of appropriate Japanese experts.

The contents of the Sri Lankan request for technical cooperation are as follows.

(1) Dispatch of Experts

- advice and instruction on the construction of school buildings (this item belongs to the School Works Divivision, MOE)
- advice and instruction on the use of audio-visual equipment
- advice and instruction on the use of computer equipment
- advice and instruction on the use of new equipment for science studies
- instruction on the training of regional educational personnel (including on the production of video teaching materials)

(2) Acceptance of Trainees

- training of regional educational personnel in Japan (achievement test paper preparation, achievement test result analysis, video teaching material preparation, distance education management and research on teaching contents and methodology, etc.)

3.2.7 Basic Policy for Assistance

The foregoing examination results positively show the effects and feasibility of the Project and the capability of the Sri Lankan side for the successful implementation of the Project. In addition, the anticipated effects of the Project meet the objectives of the Japanese grant assistance system. The provision of Japanese grant assistance for the Project is, therefore, deemed appropriate and the Basic Design is conducted in the following chapter based on the examination of the project outline described next. As stated earlier, however, it appears necessary and appropriate to change some of the contents of the Sri Lankan request.

3.3 Project Outline

3.3.1 Implementation Agency and Management System

The organization responsible for the Project will be the MOE while the actual implementation of the Project will be conducted by the NIE. The NIE is controlled by the Council which is headed by the Secretary of the MOE (currently Mr. Walter Laduwahetty) and the Council decides the activity plan, work plan and budget plan, etc. of the NIE.

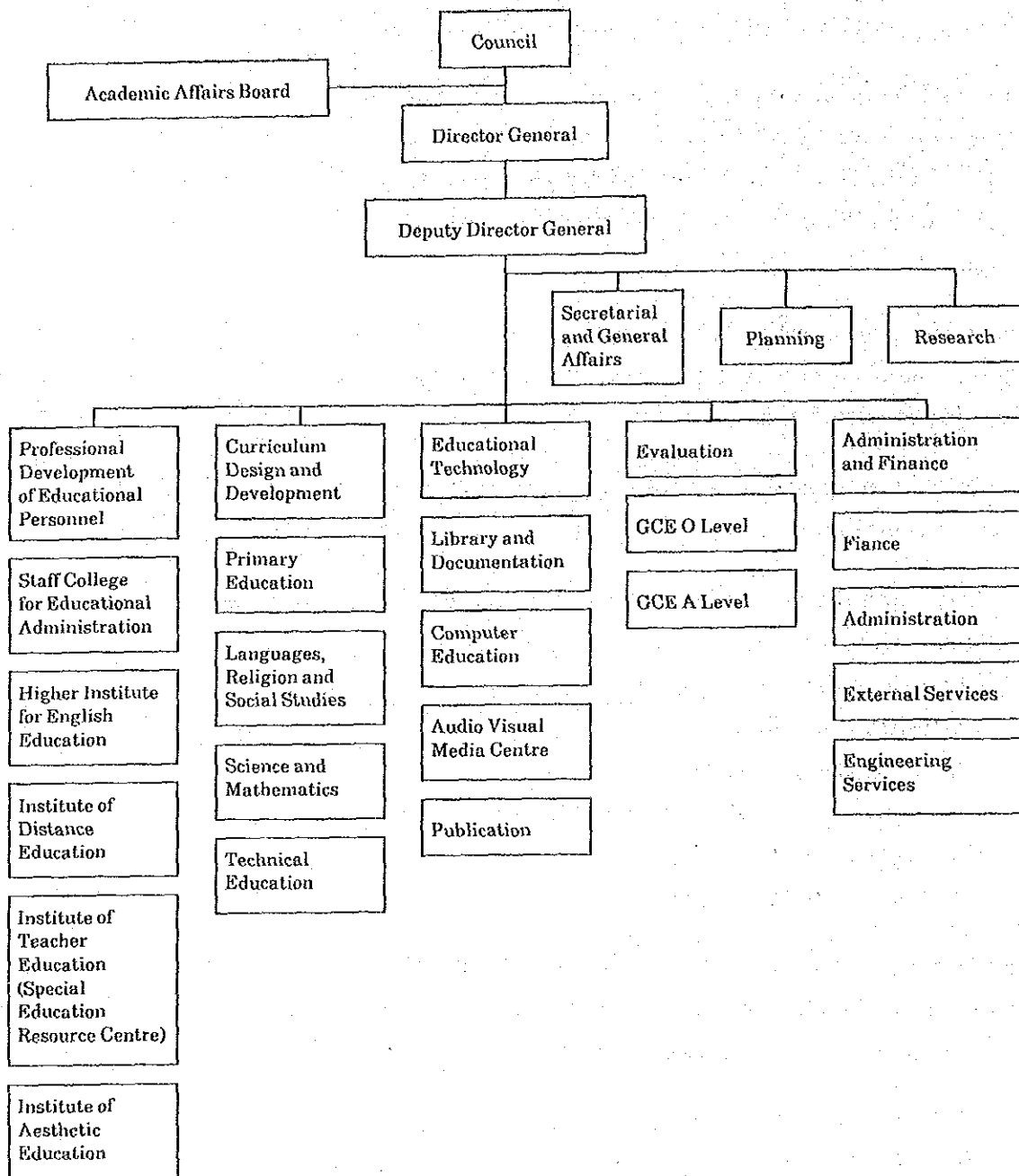
The NIE is under the supervision of the MOE and is regarded as the central organization responsible for training and research in the field of education in accordance with MOE initiatives.

The NIE is composed of the following divisions and sections under the leadership of the Director General and Deputy Director General (see Fig. 3-3-1)

- Professional Development of Educational Personnel Division
- Curriculum Design and Development Centre
- Educational Technology Division
- Evaluation Division
- Administration and Finance Division
- Secretarial and General Services Section
- Planning Section
- Research Section

The NIE currently has a total of 438 members which is planned to be increased to 710 in fiscal 1989. The number of staff to be assigned to the expanding facilities under the Project will be 334 in fiscal 1989 (see Table 3-2-2).

Table 3-3-1 Organization of NIE



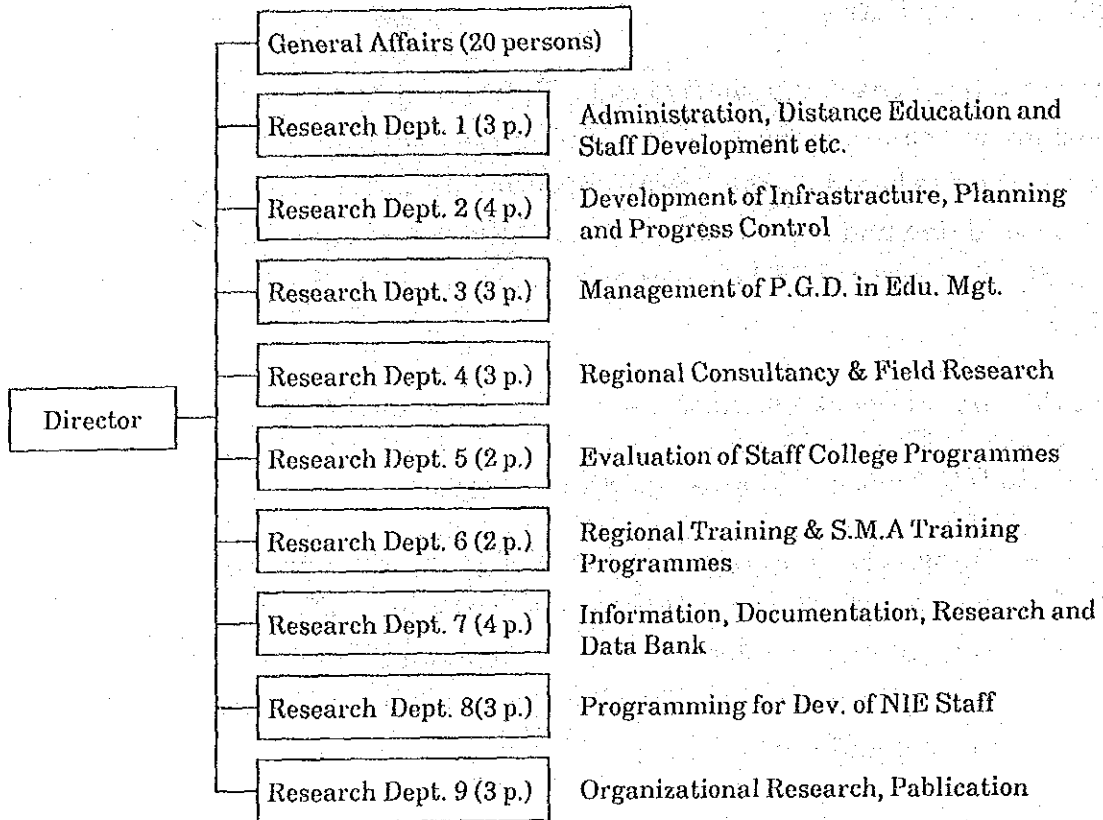
3.3.2 Activity Plans

The activities of each divisions of the NIE are outlined in 2-3-2. However, those divisions which are subjects of the Project are planning to expand the scope of their activities based on the existing training and research activities which will be consolidated under the Project. The functions and planned future activities of each division which will be expanded facilities under the Project are described below.

(1) Professional Development of Educational Personnel Division

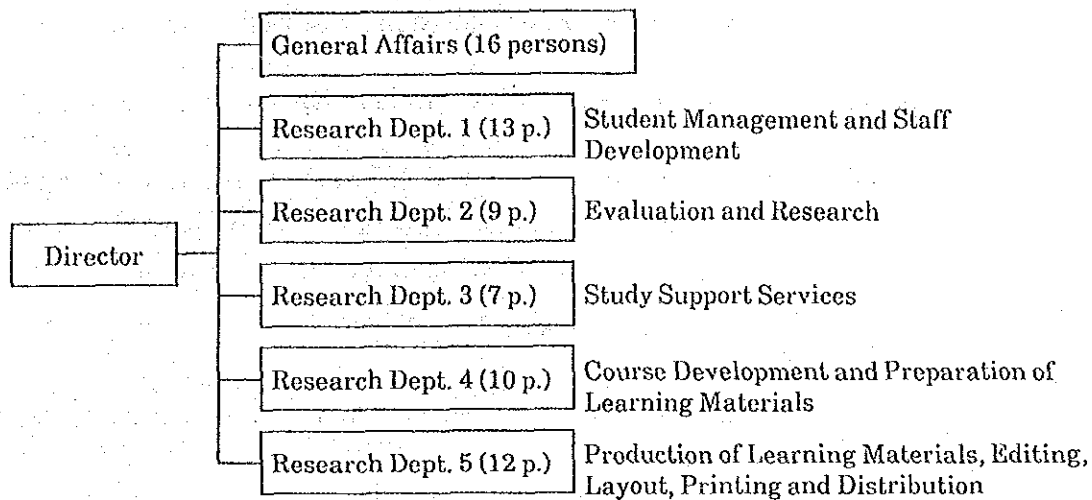
① Staff College for Educational Administration

- To develop management knowledge, skills and competencies in the personnel of the education system by training and by offering consultancy services and spear heading change through research so that efficiency and effectiveness could be enhanced and sustained throughout the system.
- To develop through education, training and project based development, management knowledge, skills and competencies in supervisory level personnel in the school system, the regional departments and in the departments and institutions coming under the MOE and the National Institute of Education.
- To provide specialist services to enrich and facilitate the functional areas of educational management for effective and efficient role performance.
- To provide a forum for the critical appraisal of on-going educational projects and prevailing practices in educational administration.
- To collaborate with other organizations and institutes involved in management education, training and research in Sri Lanka and abroad.
- To undertake applied research in the field of educational administration with a view to identifying good management practice and finding solutions to current education problems.



② Institute of Distance Education

- Provide initial professional training to non-graduate untrained teachers in service.
- Professional preparation of teachers able to teach both Mathematics and Science in the junior secondary school.
- Provide printed and multi-media supplementary and support educational material to teachers.
- Provide courses in Continuing Education for teachers.
- Prepare syllabus-based, examination oriented learning materials in selected subject areas for the benefit of secondary school students in rural and remote areas.



③ Institute of Teacher Education

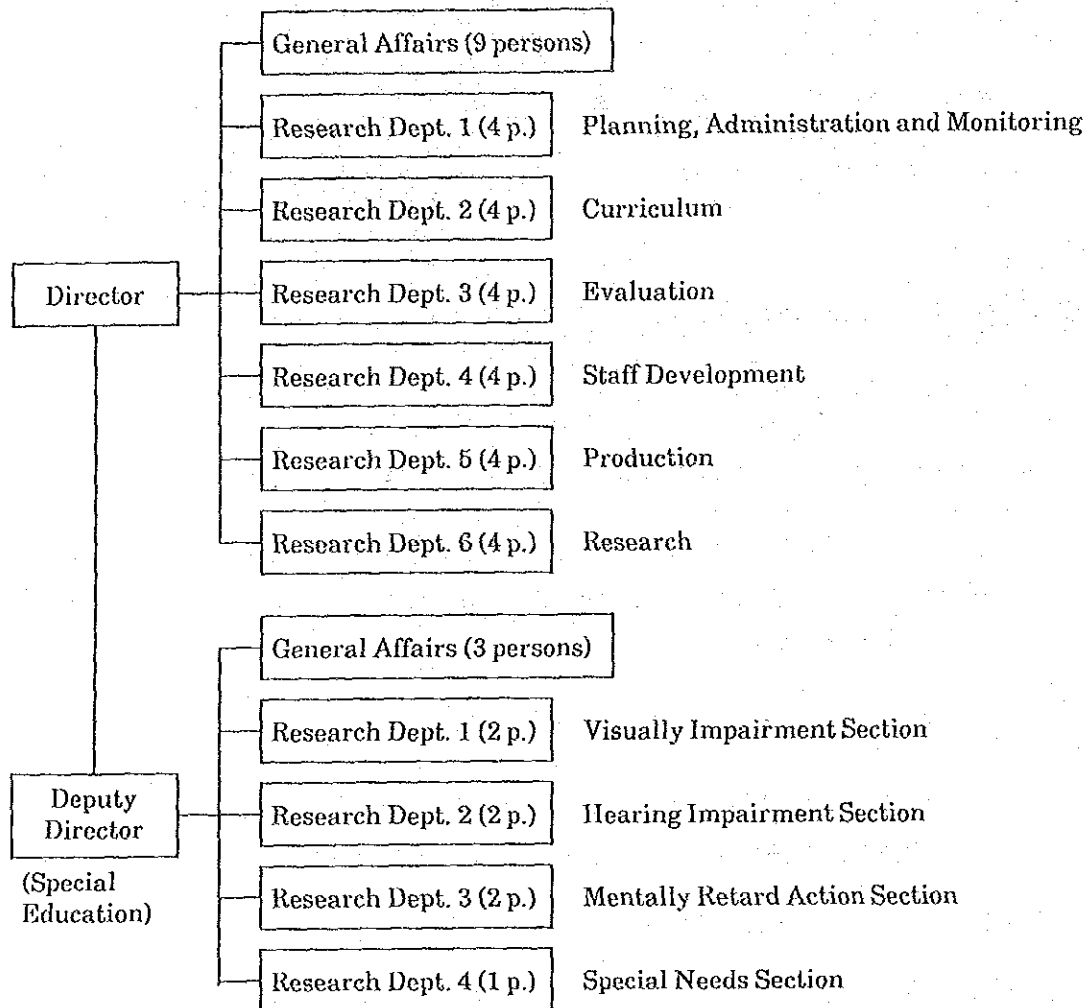
(Institute of Teacher Education)

- To provide professional training to graduate teachers in Sri Lanka.
- To provide further training/ education to teacher educators of Colleges of education, Teacher Colleges and Post Graduate Certificate in Education Programme.
- To conduct Research on Teacher Education.
- To provide consultancy on Teacher Education to other similar institution/ programmes on Teacher Education.

(Special Education Resource Centre)

- To promote in general the development of special education
- To assist in Formulating Programmes and activities to implement the accepted special education policy of the MOE.
- Provide and promote post-graduate programmes in Special Education.
- Conduct and promote studies on Special Education including performance, structures, content and methodology.

- Initiate and promote innovative practices in Special Education.
- Provide for the development of professionals in Special Education.
- Make available to the Government and Non-Governmental Organizations Specialist Services in Special Education.

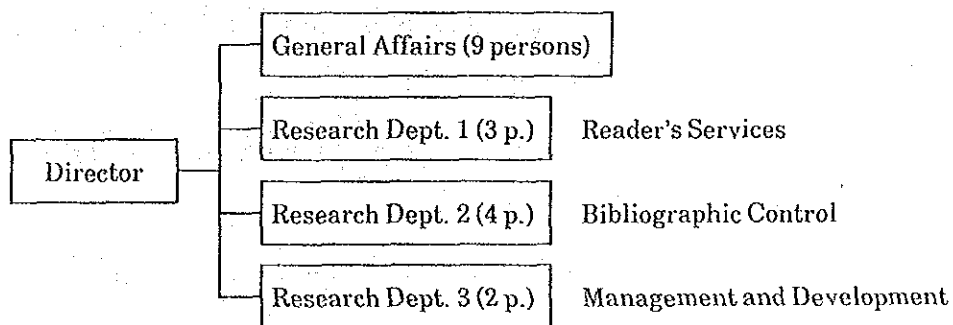


(2) Educational Technology Division

① Library and Documentation Section

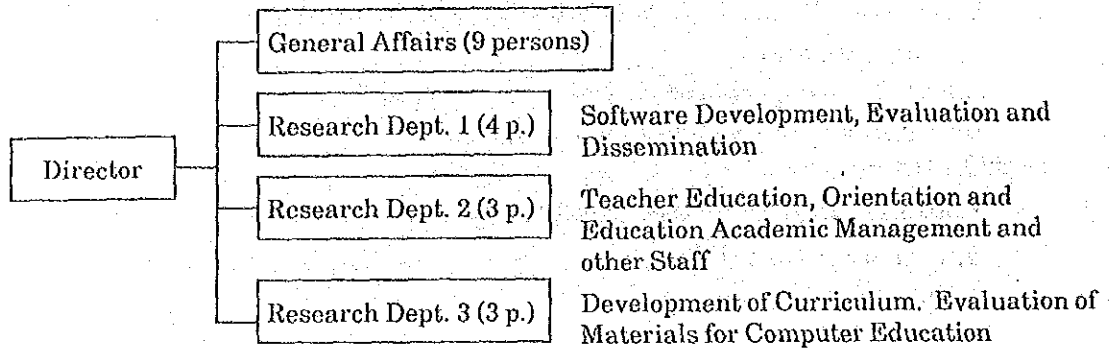
- Establish and maintain the Central Library and Information Services Centre.
- Provision of library and information services to :
 - (a) NIE staff members,

- (b) administrators, participants of educational programmes, research workers and
- (c) members of the school system.
- Establish and promote resource sharing programmes on both national and international levels acting as the national clearing house for material on education
- Establish and maintain the national data-base and information network on education
- Enhance capacity of teaching personnel to promote pupil achievement through independent and effective use of information resources
- Develop the capabilities to provide guidance and standardization of practices in the school library system leading to systematic and efficient exploitation of information resources
- Establish and develop the "Museum on Education in Sri Lanka"



② Computer Education Section

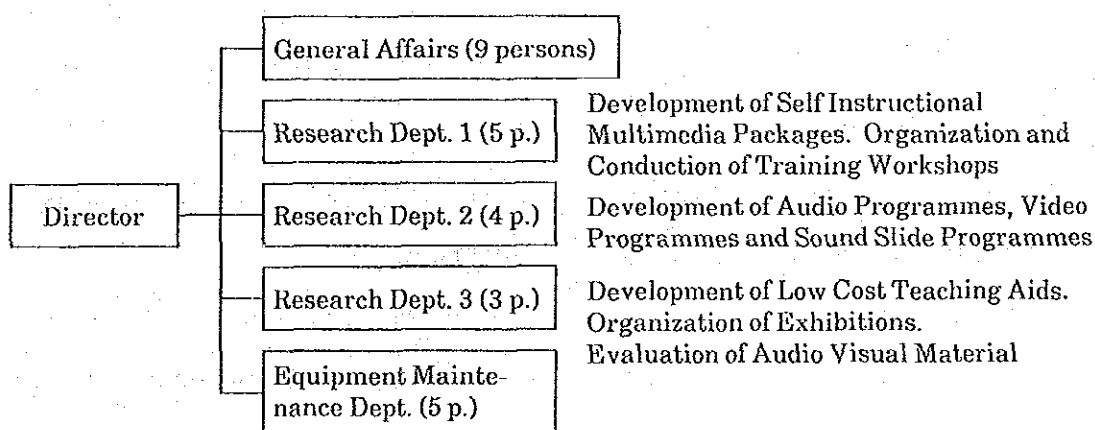
- To promote the uses of communication and information technology with education system
- To introduce CAI and CAL to primary and secondary schools
- To establish local CAI and CAL training centres
- To train advanced teachers for educational information control system
- To use computers in special education



③ Audio Visual Media Centre

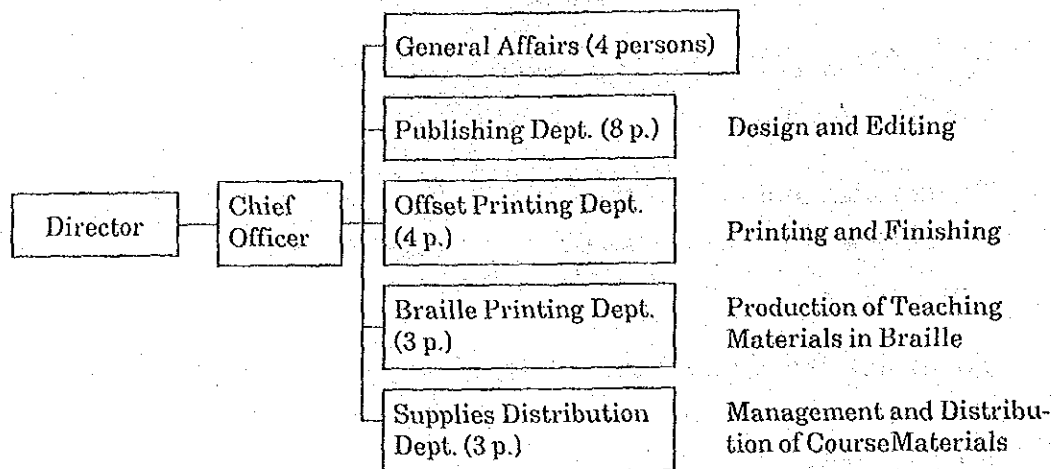
- To promote the use of communication and information technology within the education system.
- To promote the use of educational technology to improve the quality of teaching/ learning.
- To design and produce audio visual materials to be used during in-service training of teachers and class-room teaching.
- To provide guidance and training to teachers in the use of audio visual materials to improve class room practice.
- To design and develop appropriate teaching aids using material easily procurable from the environment.
- To train teachers in the production and use of low cost teaching aids.
- To improve continuously the materials produced to suit the changing needs and emerging new needs.
- To carry out research and other development activities pertaining to design and development of methodologies and materials in educational technology.
- To promote activities to encourage creativity and innovations in the production and use of educational technology.

- To carry out surveys and operational research to assess the effectiveness of audio visual materials and other teaching aids.
- To establish and maintain a resource centre for audio visual materials and other teaching aids.
- To establish and maintain linkages with other educational technology centres both local and foreign for the purpose of exchange of experiences and materials.
- To assist Sri Lanka Rupavahini Corporation and Sri Lanka Broadcasting Corporation in the production of educational programmes.



④ Publication Section

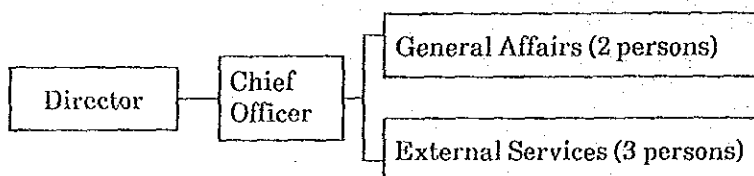
- Designing, editing, printing publishing and distribution of NIE studies.
- Production and distribution of Braille publications for the use of visually retarded students.



(3) Administration and Finance

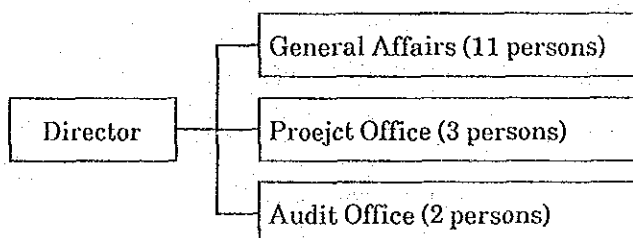
① External Services

- Preparation of Foreign Aided Project Documents in consultation with the Director General and other officials concerned.
- Monitoring and Evaluating the progress of Foreign Aided activities.
- Preparation of Progress Reports as agreed and submitting them to relevant authorities.
- Arrange for Review Meetings, prepare and maintain minutes and other records and submit them to relevant authorities.
- Communicate with the Department of External Resources and attend to all formalities regarding Foreign Aided Projects.
- Attend to any other requirements of the funding Agencies.
- Attending to official formalities regarding Foreign Training in collaboration with the Director, Planning.



(4) Secretarial and General Service Section

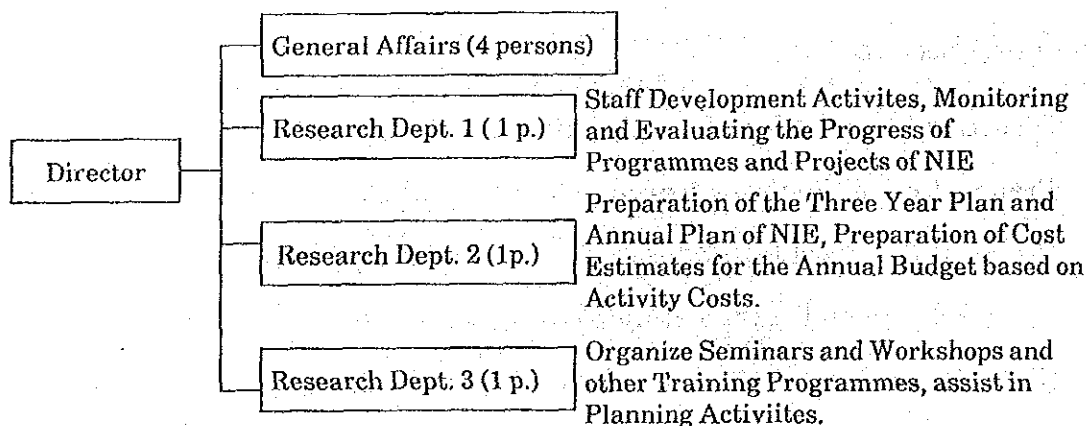
- Organizing Monthly Meetings and Special Meetings.
- Maintaining Minutes and Records.
- Preparing and submitting Memoranda for consideration and approval.
- Transmitting Directions, Observations and Decisions to relevant Programmes/ Projects and other Authorities.
- Maintaining official Records, preparing Certificates and arranging for awarding these.
- Organizing and conducting regular Auditing activities and reporting the findings to appropriate authorities for necessary action and taking follow up action.
- Assisting the Planning Division in the preparation of Work Plans and the budget.
- Providing Secretarial Services to Special Committees.
- Assisting the Director General in Legal matters with the help of legal consultants.
- Maintaining linkages with other Ministries, Departments and Organizations.



(5) Planning Section

- Direction in execution of the planning activity of the Institute.
- Preparation of the three year plan and annual plan of work of the Institute.
- Preparation of cost estimates for the annual budget based on activity costs.
 - (i) Obtain and study annual estimates from all the projects.
 - (ii) Review expenditures under each item during the previous year.

- (iii) In consultation with Directors, determine monetary provisions for each activity.
- (iv) Where necessary, revise the annual estimates of the respective projects in consultation with the ADGG and Directors.
- Progress monitoring and evaluation of activities and coordination of the planning function of the Institute. A computer based information system for planning and progress monitoring will be developed in the near future. A progress control room will be established when space is available.
- Staff development activity of the Institute. Prepare and implement a rolling staff development plan.
- Where necessary, provide assistance to projects in plan formulation, implementation and evaluation.
- Collaboration with local and foreign institutions in matters pertaining to staff training including planning.
- Conduct workshops, seminars and discussions on planning activities for the staff of NIE Projects.
- Organize orientation programmes and short term local training in relation to staff development.
- Where necessary, provide assistance to projects regarding revision of cadre in relation to activities planned.
- Activities connected with the senior management group.
- Provide information and guidance regarding training and other educational requests.
- Any other special assignments entrusted to the project from time to time.



(6) Research Section

- Initiate, conduct and promote research studies for upgrading the quality of education and assist the Institute in performing its advisory role to the Ministry regarding plans, programmes and activities for the development of education.
- Provide a forum for discussion of educational issues to ascertain the national opinion on policies, plans and implementation of educational change and crystalize thinking in the area of education.
- Collect and process data on education and act as a clearing house for dissemination of information and research findings for guiding the process of education to researchers and practitioners concerned with educational improvement.
- Co-ordinate research activities of other components of the NIE and develop links with both local and international organizations to initiate collaborative research in education.
- Provide for the development of research competency by support and training of personnel, undertaking educational research.

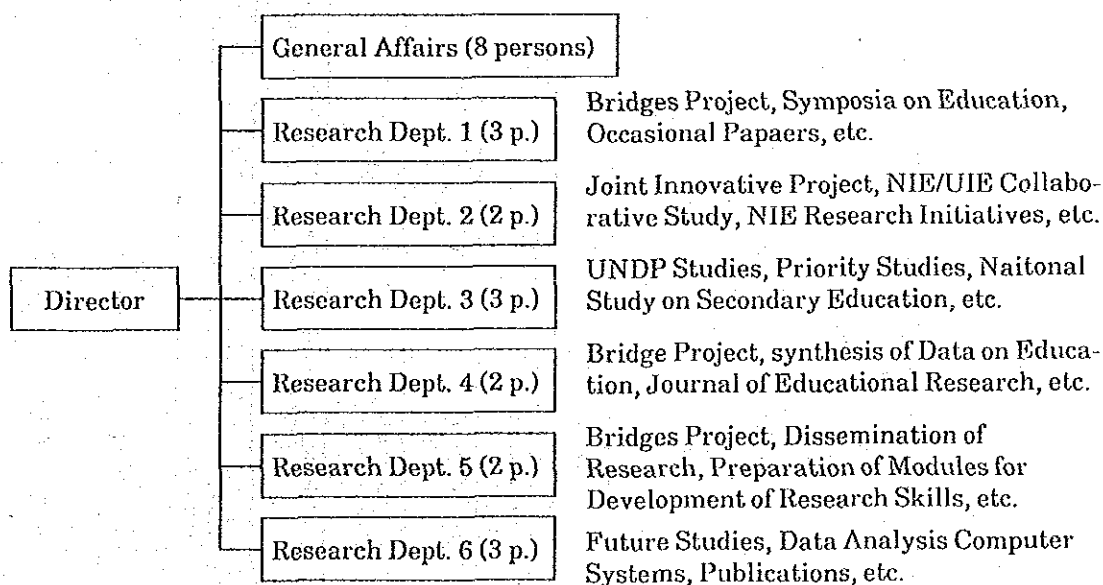


Table 3-3-2
Training Programmes : Staff College for Educational Administration

Name of Training Course	Major Training Items	Qualification of Participants	Instructor (Nos./year)	Major Required Rooms	Major Required Equipment	1989		1990		1991	
						Participants X times	Duration	Participants X times	Duration	Participants X times	Duration
1. PGDEM - Post Graduate Diploma in Edu. Mgt. (English Medium)	Theory & practices of Edu. Mgt.	Degree	U. K., Sweden, University NIE (15)	Training Room, Seminar Room	OHP	30 X 1	1 year	30 X 1	1 year	30 X 1	1 year
2. ditto (Sinhala Medium)	ditto	Degree	University, NIE, MOE SLIDA (15)	ditto	ditto	—	—	30 X 1	1 year	30 X 1	1 year
3. ditto (Tamil Medium)	ditto	Degree	ditto (15)	ditto	ditto	—	—	—	—	30 X 1	1 year
4. Induction Service Course in Edu. Management	Administration practices theory of Education	Degree	ditto (20)	ditto	ditto	30 X 1	1 month	30 X 1	1 month	30 X 1	1 month
5. Training Course in Edu. Mgt. for 1 A-E C Principals	Practice of Edu. mgt.	Principals	NIE, MOE (20)	ditto	OHP	30 X 3	6 weeks	30 X 3	6 weeks	30 X 3	6 weeks
6. Distance Training Programme in Edu. Mgt.	Principles concepts & practices	Small school principals	NIE, Regional Staff (20)	Self study in their own locations	—	100 X 1	1 year	100 X 1	1 year	100 X 1	1 year
7. Seminar/ Workshop for Officers	Issues & Problems	SLEAS Officers	NIE, MOE (20)	Training Room	OHP VTR Set	25 X 3	2 weeks	25 X 3	2 weeks	25 X 3	2 weeks
8. Deputy Principals Orientation	Elements of curriculum management	Deputy Principals	NIE, Regional Staff (20)	Regional Centre	—	25 X 3	1 week	25 X 3	1 week	25 X 3	1 week

Training Programmes : Institute of Distance Education

Name of Training Course	Major Training Items	Qualification of Participants	Instructor (Nos./year)	Major Required Rooms	Major Required Equipment	1989		1990		1991	
						Participants X times	Duration	Participants X times	Duration	Participants X times	Duration
1. Elementary Teacher Education Course for teachers of Primary grades (year 1-6)	Professional Education - its theory & practice in a Primary school curriculum inclusive of its methodology	G. C. E. (A/L) Teachers	NIE (135)	35 Regional Centres district wise	—	3,000	3 years	6,500	3 years	Not decided	
2. Maths & Science combined Course for teachers in Secondary grades (year 7-11)	Professional Education - its theory & practice in a Secondary school curriculum inclusive of its methodology	G. C. E. (A/L) Teachers	NIE (135)	ditto	—	3,200	3 years	5,500	3 years	Not decided	
3. English Language Improvement Project for non-English Teachers (ELIPNET)	English	G. C. E. (OL/ G. C. E. (A/L) Trained Teachers & Graduates	NIE (100)	ditto	—	2,000	1 year	2,000	1 year	Not decided	
4. G. C. E. (OL & A/L) oriented self-instructional courses in Maths/Science/English	G. C. E. (OL/A/L) syllabus based Maths/English/Science	Students preparing for G. C. E. (OL & AL)	NIE	ditto + NIE (Ma) Training Room, Seminar Room, Laboratories	Scientific Experimental Apparatus	—	—	—	—	Not decided	
5. Professional Degree course for non-graduate teachers in service	Professional Education - its theory & practice; Secondary School Curriculum inclusive of its teaching methodology	Trained Teachers	NIE	ditto + NIE (Ma) ditto + Workshop	ditto + Technical & Hommaking Apparatus	—	—	—	—	Not decided	
6. Certificate course for Professional involved in Distance Education	Distance Education - its theory & practice	Trained Teachers & Professional in Distance Education	NIE	NIE (Ma) ditto	ditto	—	—	—	—	Not decided	
7. Professional Teacher Education course for teachers of Physical Education	Professional Education - its theory & practice & Physical Education	G. C. E. (OL & AL) qualified untrained Physical Education teachers	NIE	Selected Regional Centres	—	—	—	—	—	Not decided	

Training Programmes : Institute of Teacher Education

Name of Training Course	Major Training Items	Qualification of Participants	Instructor (Nos./year)	Major Required Rooms	Major Required Equipment	1989		1990		1991	
						Participants X times	Duration	Participants X times	Duration	Participants X times	Duration
1. PGCE for Graduate Teachers	Professional Training	BA/BSc	NIE (28) Regional (140)	Regional Centres	—	2,120 X 1	2 years	—	—	2,440 X 1	2 years
2. Diploma in Teacher Education	Professional Training, Methodology Curriculum Evaluation	BA/BSc	NIE (4)	Training Room, Laboratories, Workshop	OHP, Scientific Apparatus, Technical & Homemaking Apparatus	60 X 1	6 months	60 X 1	6 months	80 X 1	6 months
3. Bachelor of Educational Degree for Non Graduate Teachers	Education Curriculum Evaluation	Trained Teaching Diploma	NIE (6)	ditto	ditto	200 X 2	1 month	200 X 2	1 month	200 X 3	2 months
4. Training in Curriculum Management	School Curriculum Evaluation Methodology	T. educators BA/BSc. Trained.	NIE (12)	ditto	ditto	120 X 1	1 month	120 X 1	1 month	—	—
5. Training in Teaching practice supervision	Clinical Supervision & Evaluation	ditto	NIE (12)	ditto	ditto	120 X 1	1 month	120 X 1	1 month	—	—
6. For Teacher Educators. Course in Research Methodology.	Research Methodology Theory application	ditto	NIE (4)	Training Room	OHP, Personal Computer	40 X 1	1 month	40 X 1	1 month	40 X 1	1 month
7. Course in Evaluation for Teacher Educators.	Educational statistics measurement Evaluation	T. Educators BA/BSc. Diploma	NIE (5)	ditto	ditto	40 X 1	1 month	40 X 2	1 month	80 X 1	1 month
8. Course on Guidance & counselling for Teacher Educators	Training Guidance counselling	T. Educators BA/BSc.	NIE (4)	ditto	OHP	40 X 2	1 month	40 X 2	1 month	—	—
9. Training in Primary Education for Teacher Educators	Teaching Methods curriculum.	BA/BSc	NIE (4)	ditto	ditto	—	—	—	—	60 X 1	1 month
10. Training in Research Methodology for NIE Staff	Research Methodology	BA/BSc	NIE (3)	ditto	Personal Computer	—	—	—	—	40 X 1	1 month

Training Programmes : Special Education Resource Centre

Name of Training Course	Major Training Items	Qualification of Participants	Instructor (Nos./year)	Major Required Rooms	Major Required Equipment	1989		1990		1991	
						Participants X times	Duration	Participants X times	Duration	Participants X times	Duration
1. Education of Visually impaired	Braille, Low vision Mobility training	Non-Trained Teachers	NIE, MOE (3)	Observation Room, Visual Testing Room, Training Room	Eye Sight Testing Apparatus, Observating Video System	25 X 1	2 years	25 X 1	2 years	25 X 1	2 years
2. Education of hearing impaired	Audiology Sign Language Mobility training	ditto	NIE, MOE (3)	Observation Room, Audiology Lab, Training Room	Audiometry Testing Apparatus	30 X 1	2 years	30 X 1	2 years	30 X 1	2 years
3. Education of Mentally Retarded	Identification DLA skills aesthetic therapy	ditto	NIE, MOE (3)	Observation Room, Training Room	Observating Video System	35 X 1	2 years	35 X 1	2 years	35 X 1	2 years
4. Training of Master Teachers for Provinces	Teaching of the Mildly disabled	Trained Teachers	NIE, MOE (4)	Regional Centre	—	25 X 1	15 days	25 X 1	15 days	25 X 2	15 days
5. Training of Teachers of Low Vision	Low vision training	ditto	NIE, MOE (2)	Regional Centre	—	15 X 1	15 days	15 X 1	15 days	—	—
6. Audiology	Training on Audiology	Assessment Personnel	NIE, MOE (2)	Observation Room, Audiology Lab, Training Room	Audiomatre	15 X 1	5 days	15 X 1	5 days	25 X 1	5 days
7. Course on Sign Language	Sign Language Training and Guides	Trained Teachers	NIE, MOE (8)	Observation Room, Visual Testing Room, Training Room	Video Camera	50 X 4	5 days	50 X 4	5 days	50 X 4	5 days
8. Diploma in Teaching Disabled children (Distance Mode)	All fields of Sp. Education	Trained Teachers Certificates	NIE, MOE (6)	Regional Centre	—	—	—	—	—	50 X 1	2 years
9. B.Ed. in Special Education (Distance Mode)	All fields of Sp. Education	Trained teachers certificate in Sp. Ed.	NIE, MOE (11)	Regional Centre	—	—	—	—	—	50 X 1	2 years

Training Programmes : Library and Documentation

Name of Training Course	Major Training Items	Qualification of Participants	Instructor (Nos./year)	Major Required Rooms	Major Required Equipment	1989		1990		1991	
						Participants X times	Duration	Participants X times	Duration	Participants X times	Duration
1. Training programme for Education Information Network participants	Bibliographic control	Representatives of whole library in the country	NIE (3)	Training Room, Library and Documentation	OHP, VRT Set, Personal Computer	--	--	35X1	2 weeks	35X1	2 weeks
2. Training Course for selected school librarians	Information services	School librarians	NIE (2)	ditto	ditto	--	--	20X1	2 weeks	20X1	2 weeks

Training Programmes : Computer Education

Name of Training Course	Major Training Items	Qualification of Participants	Instructor (Nos./year)	Major Required Rooms	Major Required Equipment	1989		1990		1991	
						Participants X times	Duration	Participants X times	Duration	Participants X times	Duration
1. Computer Education for Teachers (Orientation)	Introduction to computers and educational software development	B. Sc. Graduates, A/L Teachers	NIE & Trained teachers from schools (38)	Training Room, Computer, Training Room	Personal Computer	155X1 (NIE)	2 weeks	300X1 (NIE, Regional Centre)	2 weeks	300X1 (NIE, Regional Centre)	2 weeks
2. Computer Education for teachers (Upgrading)	Classroom applications of computers, use of computer as learning/teaching aid	ditto	ditto (33)	ditto	ditto	--	--	200X1 (NIE, Regional Centre)	2 weeks	200X1 (NIE, Regional Centre)	2 weeks
3. Computer Education for teachers (Higher level)	Varies on the requirements of computer education. programme time to time	ditto	NIE or foreign experts (8)	ditto	ditto	--	--	30X1	1 month	30X1	1 month
4. Computer Education for School Heads/ Sectional Heads	CAI Curriculum Implementation	School heads, Sectional heads	NIE & trained teachers from schools (28)	ditto	ditto	--	--	100X1	1 month	100X1	1 month
5. Computer Education for Regional Management Staff	Introduction of computer application in teacher training	Regional Management Staff	NIE (8)	ditto	ditto	--	--	25X1	10 days	25X1	10 days
6. Computer Education for Colleges of Education	ditto	Staff of Colleges	NIE (8)	ditto	ditto	--	--	50X1	1 month	50X1	1 month
7. Training of POO/ NIE	Computer training	POO of NIE	NIE (8)	ditto	ditto	--	--	75X1	10 days	75X1	10 days

Training Programmes : Audio Visual Media Centre

Name of Training Course	Major Training Items	Qualification of Participants	Instructor (Nos./year)	Major Required Rooms	Major Required Equipment	1989		1990		1991	
						Participants X times	Duration	Participants X times	Duration	Participants X times	Duration
1. Training Courses on Communication	Effective Communication Use of AV Material and Equipment	Graduates and Secondary Trained Teachers	NIE (6)	Training Room, Seminar Room, Studio	Studio Equipment	20 X 1	2 weeks	20 X 10	2 weeks	20 X 10	2 weeks
2. Training Workshops on Script Writing (Radio)	Script Writing for Educational Radio Programmes	Graduates and Secondary Trained Teachers	NIE, SLBC (5)	ditto	ditto	—	—	20 X 5	2 weeks	20 X 5	2 weeks
3. Training Workshops on Script Writing (TV)	Script Writing for ETV Programmes	Graduates and Secondary Trained Teachers	NIE, SLRC (6)	ditto	ditto	—	—	20 X 5	2 weeks	20 X 5	2 weeks
4. Training Workshops on Material Production	Production of Self Instructional Media Packages	Graduates and Secondary Trained Teachers	NIE, External Experts (5)	ditto + Workshop	ditto + Technical & Homemaking Apparatus	25 X 1	3 weeks	25 X 3	3 weeks	25 X 3	3 weeks
5. ditto	Production of Low Cost Teaching Aids	Secondary Trained Teachers	NIE (5)	ditto + Workshop	ditto + Technical & Homemaking Apparatus	25 X 1	10 days	25 X 3	10 days	25 X 3	10 days
6. Training Workshop on Evaluation	Evaluation Procedures Construction of Instrument	Graduates	NIE, External Experts (5)	ditto	ditto	—	—	20 X 1	2 weeks	20 X 1	2 weeks

Training Programmes : Planning

Name of Training Course	Major Training Items	Qualification of Participants	Instructor (Nos./year)	Major Required Rooms	Major Required Equipment	1989		1990		1991	
						Participants X times	Duration	Participants X times	Duration	Participants X times	Duration
1. Progress Monitoring	Computer based progress monitoring system	Staff of NIE	National Institute of Business Management (NIBM) (6)	NIBM	—	21 X 1	1 month	—	—	—	—
2. Project Formulation and implementation	Techniques costing Budget preparation Time Targets	ditto	NIBM (8)	Training Room, Seminar Room	OHP, VTR Set	25 X 1	1 month	25 X 1	1 month	25 X 1	1 month
3. Educational Planning Management	Educational Planning, Administration, Budgeting and Financial Management	ditto	NIE (5)	ditto	ditto	43 X 1	2 months	43 X 1	2 months	43 X 1	2 months
4. Personnel Management	Recruitment procedure staff discipline staff welfare Inter personnel relations and communication	ditto	NIBM (5)	NIBM	—	25 X 1	2 weeks	—	—	—	—

Training Programmes : Research

Name of Training Course	Major Training Items	Qualification of Participants	Instructor (Nos./year)	Major Required Rooms	Major Required Equipment	1989		1990		1991	
						Participants X times	Duration	Participants X times	Duration	Participants X times	Duration
1. Research Methodology	Research Design Instruments Data Processing & Analysis Report Writing	Degree, Post Grd. Degree	University, NIE, External Experts (25)	Training Room, Seminar Room	OHP, VTR Set, Personal Computer	105 X 1	1 year	105 X 1	1 year	105 X 1	1 year
2. Statistical Analysis	Use of Statistical Methods	ditto	NIE, JICA, External Experts (15)	ditto	ditto	75 X 1	1 year	75 X 1	1 year	75 X 1	1 year
3. Computer Use	Introducing Computer Ms/DOS Systal Wardstar 2000	ditto	NIE, JICA, NIBM, External Experts (3)	ditto + Computer Training Room	Personal Computer	9 X 1	1 year	9 X 1	1 year	9 X 1	1 year

Research Programmes (1991~1995) : Staff College for Educational Administration

Name of Research Project	Contents of Project	Duration of Project	Number of Researchers	Major Required Rooms	Major Required Equipment
1. Quality Improvement through Curriculum Management	Determination of achievement levels. Develop. tech. for experi	5 Years	3	Academic Staff Office, Library and Documentation	OHP, Personal Computer
2. Planning Practice at School Level	Improvement on planning practice	6 months	2	ditto	ditto
3. Role of Principal in the Concept	Identifying the role of the principal under the provincial councils. Suggests ways of performance improvement.	6 months	3	ditto	ditto
4. Developing strategic education management mechanisms at School levels for a viable program of school improvement	Identify good management suggest ways and means of incorporating them in future Plans	1 Year	2	ditto	ditto
5. Case Studies of good school practice	Indicators of effectiveness mode of achieving effectiveness	1 Year	4	ditto	ditto

Research Programmes (1989~1995) : Institute of Distance Education

Name of Research Project	Contents of Project	Duration of Project	Number of Researchers	Major Required Rooms	Major Required Equipment
1. Survey on Distance Learning needs within the Teaching cadre	Collecting teacher responses on DE learning needs from teaching cadre of Sri Lanka	Mar-Aug '89	8	Academic Staff Office, Library and Documentation	Personal Computer
2. Survey on the nature and effectiveness of the assistance provided through the instructions on assignments	Analysis of the instructions placed by tutors on assignments	May-Oct '89	8	ditto	ditto
3. Statical Analysis of final examination data	Statical analysis of annual final Examination Data	Oct-Dec '89 Oct-Dec '90 Oct-Dec '91 Oct-Dec '92 Oct-Dec '93 Oct-Dec '94 Oct-Dec '95	8 8 8 10 10 10 10	ditto	ditto
4. Analysis of Bio-data of DE Students	Collection and analysis of Bio-data of annual recruits	Jul-Oct '89 Jul-Oct '90 Jul-Oct '91 Jul-Oct '92 Jul-Oct '93 Jul-Oct '94 Jul-Oct '95	8 8 8 10 10 10 10	ditto	ditto
5. Survey on resources and facilities on Distance Education Regional Centres	Collection and analysis of resource data of regional centres	Jan-June '89 Jan-June '91 Jan-June '93 Jan-June '95	8 8 10 10	ditto	ditto
6. Survey on teaching performances of the teachers who graduated through the IDE	Observation and evaluation of the teaching performances of the IDE graduates	April-Dec '89 April-Dec '92 April-Dec '94	8 10 10	ditto	ditto + OHP, VRT Set
7. Opinion survey on Module Revision	Collecting and analysis of responses of DE students on Module Revision.	Jan-June '89 Jan-June '92 Jan-June '95 Apr-Dec '90	8 10 10 8	ditto	ditto
8. Survey on Evaluation of Educational Practices	Observation and collection of data				
9. Survey of ways and means to improve the existing Distance Education learning system of IDE	Data collecting and observation of various ways and means of instructions	Jan-Aug '90 Jan-Aug '95	8 10	ditto	ditto
10. Survey on drop-out problem in DE system of IDE	Collection and analysis of data pertaining to drop-out problem	Mar-Dec '90 Mar-Dec '94	8 10	ditto	Personal Computer
11. Survey on attitudes towards distance learning in the teaching profession in Sri Lanka.	Attitude testing and analysing of test data	Jan-Aug '90 Jan-Aug '93 Jan-Aug '95	8 10 10	ditto	ditto

Research Programmes (1991~1995) : Institute of Teacher Education (1)

Name of Research Project	Contents of Project	Duration of Project	Number of Researchers	Major Required Rooms	Major Required Equipment
1. Staff Development needs of Teacher Educators	Analysis of Training needs (sample 200)	1 year	8	Academic Staff Office, Library and Documentation	Personal Computer, OHP, VRT Set
2. Mental health of the students who follow PGCE Teacher Ed. prog.	Mental health (sample 400 student teachers PGCE).	1 year	10	ditto	ditto
3. Effect of preservice T. Education on teaching classroom	Teaching and learning.	2 years	16	ditto	ditto
4. Problems & issues in internal assesment in Teacher Ed. progrmmes.	Prob. & issues in internal assesment.	1½ years	26	ditto	ditto
5. Peer learning in T. Edu. Institutions	Learning aspect in Teacher Education.	1 year	16	ditto	ditto
6. Teaching methods applied in college of Edu.	Curriculum Evaluation and Teaching Methods	2 years	14	ditto + Laboratories, Workshop	OHP, VTR Set, Scientific Apparatus, Technical & Homemaking Appratus
7. Innovation practices in Tea. Edu. Inservice preservice.	Curriculum. Evaluation.	2 years	18	Academic Staff Office, Library and Documentation	Personal Computer, OHP, VRT Set
8. Use of Library by the student teachers of college of Edu.	Curriculum support activity in learning.	1½ years	15	ditto	ditto
9. Analysis of the role of teacher Educators in S. L.	Teaching Guidance Counselling Evaluation Research.	2 years	20	ditto	ditto
10. Integration of Preservice & Inservice Tea. Edu.	Linages in Preservice & Inservice Tea. Edu.	1½ years	15	ditto	Personal Computer, OHP, VRT Set
11. Effectiveness of Professional Courses in Teacher Edu.	Effect of Professional component.	2 years	24	ditto	ditto
12. Construction of Test Items for Aptitude Test for Teacher.	An Instrument to test teacher aptitudes.	2 years	20	ditto	ditto
13. Motivation of students in T. Edu. programme.	Motivation for further Edu.	1½ years	12	ditto	ditto
14. Social Economic factors in T. Edu.	Effect of Evaluation T.	1 year	8	ditto	ditto

Research Programmes (1991~1995) : Institute of Teacher Education (2)

Name of Research Project	Contents of Project	Duration of Project	Number of Researchers	Major Required Rooms	Major Required Equipment
15. Training needs of trained teachers.	Training needs of Trained teachers.	1 year	10	Academic Staff Office, Library and Documentation + Workshop	ditto + Scientific Experimental Apparatus, Technical & Homemaking Apparatus
16. Management of T. Education Programme in Sri Lanka.	Management & Organization.	1½ years	8	Academic Staff Office, Library and Documentation	OHP, VRT Set

Research Programmes (1991~1995) : Special Education Resource Centre

Name of Research Project	Contents of Project	Duration of Project	Number of Researchers	Major Required Rooms	Major Required Equipment
1. Sinhala Sign Language	Video recording of Signs, Sign Dictionary	8 yrs.	12	Academic Staff Office, Studio, Library and Documentation	Studio Equipment
2. Speech Audiometry	Develop Audiometry Tests	2 yrs.	3	ditto	Audiometry Testing Apparatus
3. Experimental Manufacturing of instructional materials	Develop Instructional materials	4 yrs.	3	ditto	Studio Equipment
4. Compansation for Hearing loss	Effectiveness of Hearing aids	2 yrs.	5	ditto	Hearing Aid
5. Learning materials for low vision children	Production & Evaluation of learning Materials	2 yrs.	5	ditto	Brailler, Braille Copier, Vision Scanner
6. Behavioural traits of autistic children	Special behaviour patterns	3 yrs.	4	ditto	Observating Video System
7. Mather Development of cerebral palsied children	Evaluation of Development	1 yr.	2	ditto	Studio Equipment
8. Societal Integration of disabled children	Acceptance of the disabled in society	1 yr.	4	ditto	ditto
9. Employment potential of disabled persons.	Effectiveness of vocational training	1 yr.	4	ditto + Workshop	ditto

Research Programmes (1991~1995) : Computer Education

Name of Research Project	Contents of Project	Duration of Project	Number of Researchers	Major Required Rooms	Major Required Equipment
1. Self study materials	Continuation of these research for refining for School use	1991-1993	3	Academic Staff Office, Software Development Room	Personal Computer
2. Use of CAI help in multigrade selected subjects	Continuation of research in implementation of their use	1991-1994	2	ditto	ditto
3. Development of CAI for GCE (AL) subjects, Selected subjects	Research for refinement and better utilization of this level	1991-1995	2	ditto	ditto
4. Use of computer to Develop problem solving skills at Primary level	Development & application at classroom level of selected modules	1993-1995	1	ditto	ditto
5. Development of self study materials for specific curricula. Supplement on particular historical & cultural themes.	Selection of items of knowledge in these areas which are not include in classroom teaching & preparation Com. selfstudy materials.	1993-1995	1	ditto	ditto
6. Comparative effectiveness of computers in teaching/learning	Selection of content areas & evaluate effectiveness of teaching learning compared with texts, lectures	-	1	ditto	ditto

Research Programmes (1991~1995) : Audio Visual Media Centre

Name of Research Project	Contents of Project	Duration of Project	Number of Researchers	Major Required Rooms	Major Required Equipment
Visual Literacy Survey	Find out Attitudes of Children Towards TV Programmes	1990	4	Training Room, Studio, Teaching Material Production Room	Studio Equipment
ETV Survey	Find out the Effectiveness of Present ETV Programmes	1990	5	ditto	ditto
Survey on Educational Radio Programmes	Find out the Effectiveness of Present Radio Programmes	1990	5	ditto	ditto
Evaluation of Self Instructional Media Packages	To Obtain Feed Back for Producing Better Packages	1990 1991 1992	4	ditto	ditto
Evaluation of Low cost Teaching Aids	To Obtain Data for Improving Material	1990 1991 1992	4	ditto	ditto
Need Survey	Identify Areas Where Material are Required	1990 1991	8	ditto	ditto
Development Research	To Obtain Data to Produce Better Radio Programmes	1990 to 1995	4	ditto	ditto
Development Research	For Improving Low Cost Teaching Material	1990 to 1995	3	ditto	ditto
Development Research	For Producing Better Self Instructional Packages	1990 to 1995	5	ditto	ditto

Research Programmes (1991~1995) : Publication

Name of Research Project	Contents of Project	Duration of Project	Number of Researchers	Major Required Rooms	Major Required Equipment
1. Development of a manual for Publication	Study the state of art and make recommendation	3 months	1	Academic Staff Office, Library and Documentation	Process, Printing Apparatus

Research Programmes (1991~1995) : Planning

Name of Research Project	Contents of Project	Duration of Project	Number of Researchers	Major Required Rooms	Major Required Equipment
1. Study of planning activities of other related institutions.	Comparative study of planning process in the Education Ministry, Universities, NIBM, Regional Education Depts and some selected schools.	5 months	4	Academic Staff Room, Library and Documentation	Video Camera
2. Impact of training on project planning, implementation, on NIE staff.	Assessment of professional advancement of staff since launching of the Staff Development Plan and how it has helped in their task performance.	6 months	2	ditto	—
3. Study on Education data bases for planning.	To do a survey of available information for planning with a view to develop a data base for planning.	5 months	3	ditto	Personal Computer
4. Impact of training on quality improvement of NIE staff to perform their task more effectively.	Assessment of training input that has gone with the Projects at different stages of their operation; its total effect on the NIE system.	8 months	3	ditto	—
5. Assessment of future training needs of NIE.	Based on current training provided, to look for specific training needs both short term and long term, and to workout a system to update the needs based on changing priorities in the short term.	6 months	3	ditto	—

Research Programmes (1991~1995) : Research

Name of Research Project	Contents of Project	Duration of Project	Number of Researchers	Major Required Rooms	Major Required Equipment
1. Child Studies	Development Learning Environment, Learning & Problems Achievement	<u>1991</u> <u>1992</u>	26	Academic Staff Office, Library and Documentation	OHP, VTR Set
2. Studies on Teachers	Retirement Placement Training & Incentives	<u>1993</u> <u>1994</u>	15	ditto	ditto
3. Studies on Use of Educational Technology	Use of Media Instructional Aids Instructional situations Instructional problems	<u>1993</u> <u>1994</u>	26	ditto	ditto
4. Studies on Development and use of curriculum & curriculum materials	Curr. Relevance Curr. Content Curr. Implementation Evaluation of learning	<u>1991</u> <u>1992</u>	24	ditto + Teaching Material Production Room	ditto
5. Studies on School plant & Infrastructure facilities	School Premises buildings, furniture, equipment	<u>1991</u> <u>1992</u>	24	ditto	VTR Camera
6. Studies on School Management	School Organization Supervision School Planning Community Links	<u>1993</u> <u>1994</u>	10	ditto	VTR Set
7. Policy Impact Studies	Decentralization & administration School Clusters Continues Assesment Teacher Recruitmental & Training, Computer Education in Schools	<u>1994</u> <u>1995</u>	30	ditto	VTR Camera

The planned training and research programmes of the NIE's divisions and sections which will be located in the facilities constructed by the Project for fiscal 1991 onwards are compiled below.

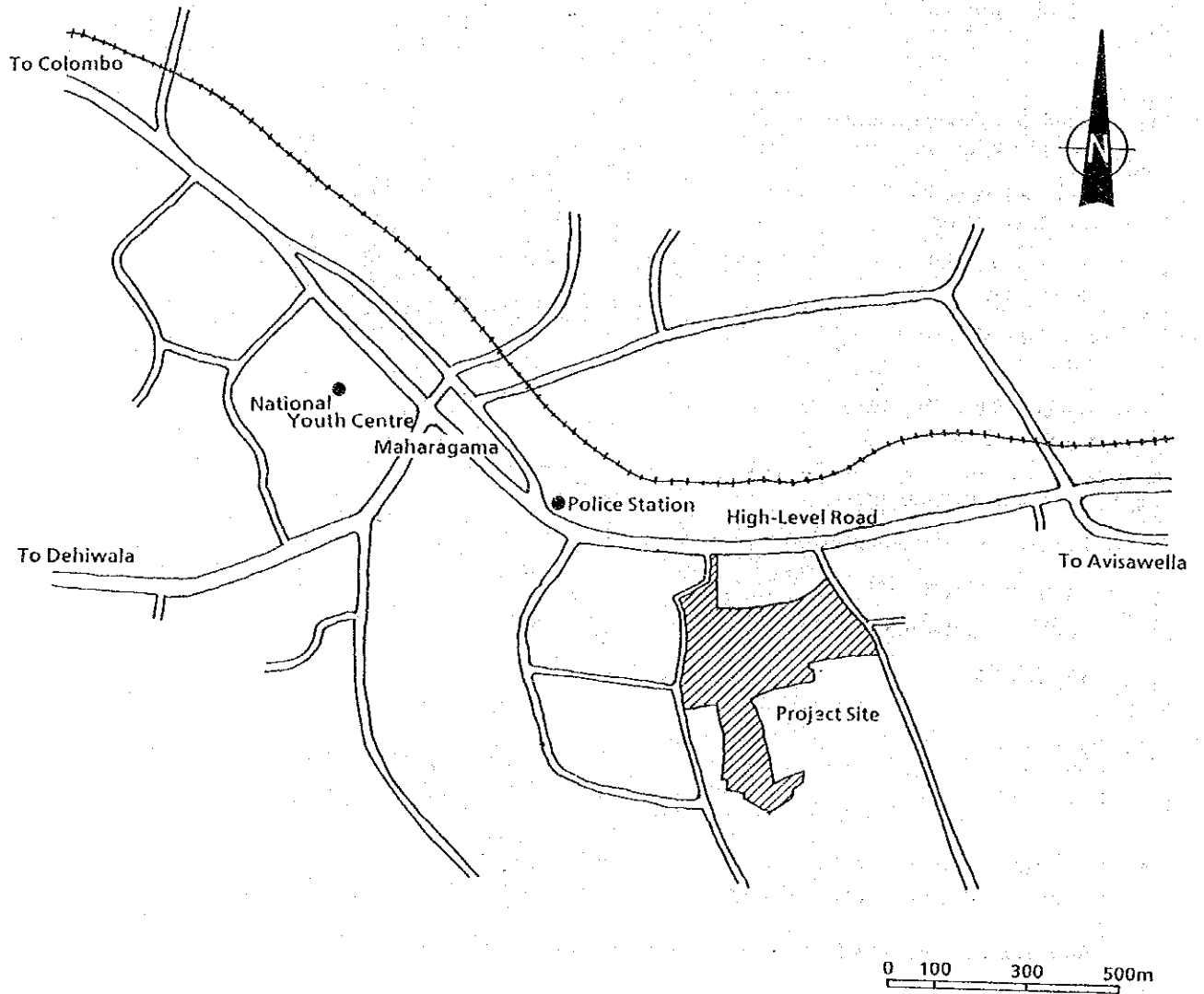
Division/Section	Training Programmes*		Research Programmes	
	No. of Courses	No. of Trainees	No. of Subjects	No. of ** Researchers
1. Professional Development of Educational Personnel				
- Staff College for Educational Administration	6	285 (460)	5	14
- Institute of Distance Education	not decided		8	80
- Institute of Teacher Education	6	900	16	240
- Special Education Resource Centre	5	315	9	42
2. Educational Technology				
- Library and Documentation	2	55	-	-
- Computer Education	7	708***	6	10
- Audio Visual Media Centre	6	570	9	42
- Publication	-	-	1	1
3. Planning	2	68	5	15
4. Research	3	189	7	155

* Only those courses held at the Maharagama Campus are counted and those held at regional centres and through correspondence course are excluded.

** Some researchers are involved in more than one research and the figures include external researchers.

*** Including Training at regional centres.

Fig. 3-3-2 Area Map



3.3.3 Location and Conditions of Project Site

(1) Historical Background

The project site is part of the Maharagama Campus of the NIE which was established in 1986. Originally a military camp for British Commonwealth troops during the Second World War, the site was converted to the campus of the Maharagama Teachers' College at the end of the War. The name Maharagama has long been associated with an esteemed educational institution and, therefore, has an appropriate image for the expanding NIE which will play a central role in Sri Lankan education in the future.

(2) Location and Site Conditions

1) Current Condition of the Project Site

The NIE's Maharagama Campus is located some 16km south by southeast of Colombo and is owned by the MOE. The shape of the Campus, including that of the project site, is irregular as shown in Fig. 3-3-2. The Campus covers a total area of some 8.86ha and the project site is located in the western part. The entire Campus has a large difference of elevation reaching 20m at the largest, and within the project site, the ground level of the northern part is about 10m higher than that of the southern part. Highway No. 4 (High-Level Road, 12~15m in width) extending from the street within the city of Colombo runs on the northern side of the site, and also connects with the main access to the Campus. The eastern side of the site faces Gammana Road which is also connected with the High-Level Road to the north. A sub-gate is provided along this road, across which there is the Black Teaching College since the time of the former normal school. The western side of the site faces Waraketiya road (4m in width) which also leads to the High-Level Road by going north, but there is no access to the site from this road at present. Many single story houses are scattered on the east, west and north sides of this site. The lowland on the south of the site is used for farming (comprising paddy field and dry field).

2) Condition of the Site and Existing Buildings

The three sides of the site are surrounded by roads; the High-Level Road which is the main road on the north, Gammana Road on the east, and Waraketiya Road on the west. The main access to the site from the northern main road is connected by a narrow strip of land about 70m in length which

looks like a blind alley and makes the impression of the site quite poor despite its size.

Since the project site is considerably far from the frontal road as above, the environment of the site may be called tranquil, free of the noise of road traffic.

The Campus is rather steep. As there is no regulating reservoir and as the drainage of sewage and miscellaneous waste water from the existing facilities and stormwater is inadequate, waste water and stormwater flows into the southern and western lowland, resulting in many complaints concerning flooding from nearby residents, especially those in the west of the Campus, in the rainy season.

The Campus is clearly separated from the outside by crimp met fencing with spikes (concrete wall in parts) of 2m in height. Both the main gate and sub-gate have double-leaf gates with concrete gate posts.

There are 5 concrete elevated water tanks on the Campus, 4 of which ($45\text{m}^3 \times 3 + 10\text{m}^3 \times 1$) are currently in use. The construction of a new pump house ($5\text{m} \times 9\text{m}$, 2-stories in part) is in progress in the low ground area at the southern part of the Campus and the new installation of 3 pumps (one of which will be a reserve pump) is planned by the Sri Lankan side.

As described in detail in Par. 2-3-2, there are altogether 22 buildings including office building, laboratory building, training building, staff residences and employees' flats, etc. with a total floor area of $3,465 \text{ m}^2$ within the area of about 2.4 ha which was specifically designated as the project site this time. Adding the $11,391 \text{ m}^2$ total floor area of buildings on the rest of the Campus, the total floor area of existing buildings on the Campus is as big as $14,865 \text{ m}^2$. Although some were newly built and some others already renovated, many of them are several tens of years old and have remarkably deteriorated.

Although there had been no objection to dismantle and remove all the existing buildings on the project site including elevated water tanks ($45 \text{ m}^3 \times 2$ sets), the preservation of the sacred lime tree and the temple standing close by was insisted upon as an absolute necessity.

The existing main gate will be abolished, and the alley-like strip of land and Waraketiya Road on the western side will be integrated into a public road, facing which a new main gate will be installed.

(3) Natural Conditions

1) Climate, Topography and Geology

o General Climate

Sri Lanka is an island country located between latitude 5°55' and 9°50' N and belongs to the oceanic tropical monsoon zone. The Colombo area in which the project site is located is situated along the western coast of Sri Lanka Island and is affected by a southwestern monsoon between May and September and a northeastern monsoon between November and March.

o Temperature, Humidity and Rainfall

The mean monthly temperature is 26 - 28°C throughout the year. The oceanic climate causes high humidity (relative humidity of 70 - 80%). The annual rainfall is 2,000 - 2,500mm and the rainfall is concentrated in the southwestern monsoon season between May and September.

o Wind Direction and Wind Velocity

The prevailing wind direction is southwest between May and September (Maha season) and northeast between November and March (Jara season) due to the movement of the equatorial air mass. Wind velocity is usually 1~3 m/sec. although strong winds are sometimes caused by the conditions of the Indian Ocean.

o Lightning

Lightning is concentrated during the rainy season, especially in March and April when the monsoon becomes very active.

o Topography and Geology

Sri Lanka is a tropical island country located south by southeast of India in the Indian Ocean. It has a length of some 432km in the north-south direction from Cape Parumina in the north to Cape Dondra in the south and a width of some 224km in the east-west direction from Colombo in the west to Sagamankande in the east.

Sri Lanka occupies a geographically important position for traffic between the East and West and Colombo is an important port for vessels, connecting the West to the East via the Suez Canal.

The topography of Sri Lanka is dominated by a large mountainous area in the south central part of the island (Pidurutalagala is the highest

peak with an elevation of 2,524m) and the Horton Plains and Nuwara Eliya Plateau are located in this mountainous area.

The east, west and south of the island have narrow strips of flat land while there is a large area of flat land in the north. As mountain ranges are located at the centre of the island, rivers radiate in all directions.

2) Natural Disasters

o Earthquakes

Sri Lanka is not located in any major earthquake belt and no damage due to earthquakes has been recorded despite the occurrence of earthquakes in the past.

o Other Natural Disasters

Apart from flooding caused by localized torrential rain, cyclones occasionally cause minor damage along the eastern coast.

(4) Conditions of Infrastructure

1) Electricity

Electricity is currently supplied to the Maharagama Campus by a high voltage power cable (3-phase, 3-line, 11KV, 50Hz) to the substation on the eastern side of the Campus from the Highway via Gammana Road. A 100KVA transformer is installed in this substation and electricity is supplied to each building from the substation via low voltage aerial service wires (400/230V).

In the Maharagama District, the respective jurisdictions of the CEB (Ceylon Electricity Board) and the LEC (Lanka Electricity Company, Ltd.) have been clearly defined by the revision of the regulations on electric work which went into effect recently, according to which LEC will undertake 11KV line work and CEB, 33KV line work.

LEC is responsible for the leading-in work of 11KV line under this Project and is now executing electricity supply work around the site. When a new transformer is installed at the place where the transformer (100 KVA) exists now, the secondary wiring to the project site would become long, resulting in a voltage drop and a higher cost. As a result of consultation with LEC, it was confirmed that it was possible to lead in a service wire from another system, although on the same site, so that a decision was reached to distribute electricity to the project site by branching a service

wire from CEB's high-tension aerial cable (3 phase, 3 wire, 11KV, 50Hz) laid over the High-level Road.

The frequency of service interruption in this neighborhood is two or three times a week lasting for 30 to 60 minutes each time. The voltage fluctuation is $\pm 10\sim 15\%$.

2) Telephone

A local aerial trunk line of Ceylon Telephone and Telegraph Office traverses from Waraketiya Road on the west through the northern side of the NIE Campus to Gammana Road on the east, from which two direct circuits and another two circuits through the switchboard (made by NEC) are dropped in. 56 extension telephone sets are installed within the main building.

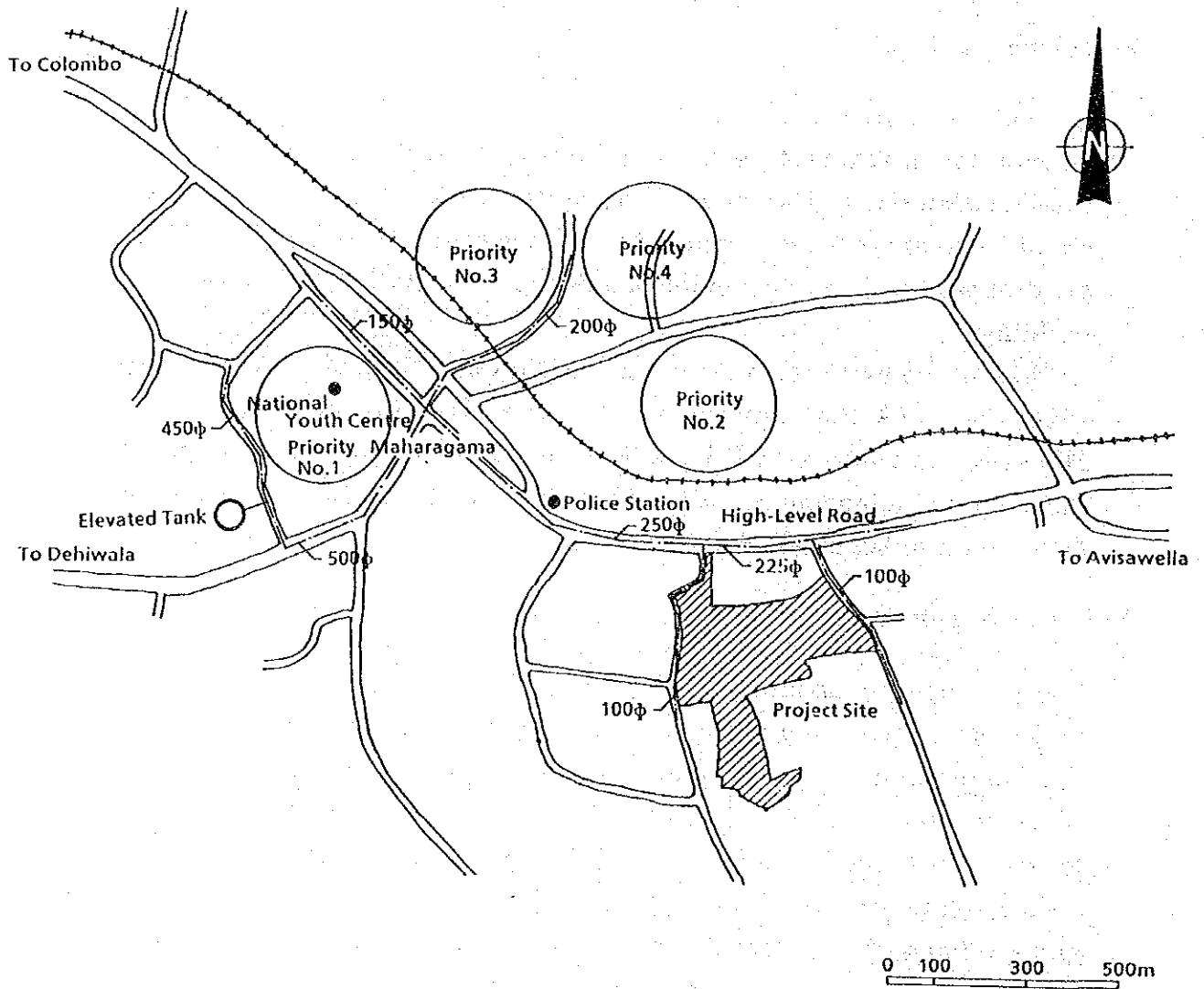
At present, no extra telephone circuit is available around the site, but by 1990, the trunk line network now under construction in Colombo and Maharagama Districts will have been completed to allow some rooms in the supply of telephone circuits. Thus, it would be possible to secure the necessary number of telephone circuits.

3) Water Supply

there is currently no municipal water supply facility in the vicinity of the project site. According to the water supply network construction plan for the Maharagama District of the National Water Supply and Drainage, construction work in the vicinity of the project site will commence in 1989 for scheduled completion by around 1995. According to the plan, a 225mm PVC water main will be laid under the High-Level Road in front of the site and a 100mm PVC water main under the roads on the east and west of the site, respectively. Conveyance of water to this area is planned to be 4~5 hours a day. (An hour-restricted water supply system for the area is inevitable on account of the relationship between the main elevated water tank capacity and the amount of water conveyed.)

Water supply to the existing buildings on the Campus is made by pumping up water from five wells on the southern tip of the Campus to the four elevated tanks at four places within the Campus which feed water to each building. Since the water conveyance system and the elevated tanks are divided into two blocks, i.e., the eastern block and the western block where the project site is located, the eastern block will be unaffected even when the buildings and elevated tanks on the project site are demolished. The

Fig. 3-3-3 Water Supply Plan



five wells currently in use are approximately 7m in depth and 2.8m in caliber and all of them are connected by common piping. The natural water level during the dry season is GL-5m, and the water depth at the bottom is approximately 2m. The daily water conveyance time depends on the welling up condition, and water pumps are now operated for two hours between A.M. 6:00~8:00, two and a half hours between A.M. 10:00~12:30, and one hour between P.M. 5:00~6:00, or a total of 5.5 hours a day to store water in the elevated tanks for supplying water to each building. The existing well pumps are old and frequently suffer from leakages and breakdowns, so that three new pumps with a capacity of 80mm×774 l/min. × 61m × 7.5KV each (of which one set is on reserve) have already been purchased and installed in the new pump house (5m× 9m, two-storied in part). The amount of water supply of 250 m³/day for some 400 persons is high compared to the Japanese standard but there might be a considerable amount of leakage on route since the water lift piping, water service piping and elevated tanks have deteriorated. A water supply wagon is used at present to supply water for sprinkling and for construction work within the Campus as the water supply capacity from the existing wells is inadequate.

The analytical result of well water quality shows an extremely strong acidity (pH 4.17~4.45) probably due to the effects of soil characteristics in the area. Anti-corrosion measures are necessary to protect the piping materials buried underground and concrete foundations must also be protected. In the bacteriological examination, a high concentration of colon bacilli (4.0×10^3 /ml) was detected, making the water unpotable. Sterilization treatment of well water is, therefore, necessary. This water pollution seems to have been caused by the infiltration treatment of waste water from existing buildings on the Campus which affected the wells located in the lowland in the downstream of the groundwater vein.

4) Drainage

At present, no drainage main is laid on the project site. Sewage and waste water discharged from the buildings in the surrounding area and NIE's existing facilities are drained to a cesspool for decomposition and then to an infiltration basin. There is no disinfection system and the drainage facilities are not properly maintained. Storm sewage goes through side ditches around buildings and discharged into the drainage canal (infiltration type) without the terminal facility and which was excavated

without timbering. Storm sewage, miscellaneous waste water and sanitary sewage which failed to infiltrate into the ground in the drainage canal flows into the adjoining land on the west side which is lower than the project site, or to the swamp in the downstream where the well water storage tank is installed. According to the industrial effluent standards issued by the Central Environmental Agency, the drainage standards applicable to the Maharagama District are BOD : 30 ppm, COD : 250 ppm, and pH 6-8.5.

5) Gas

As there is no city gas supply facility, propane gas (LPG) will be used.

3.3.4 Outline of Facilities and Equipment

(1) Facilities

In deciding the total facility size, the number of the required rooms and their respective sizes were calculated based on the personnel and activity plans taking the contents of the Sri Lankan side's request into consideration. The planned buildings are outlined as follows.

o Headquarters Building - total floor area: 1,681m² <Phase 1>

houses room relating to the Director General, Deputy Director General, Assistant Director Generals, the Secretarial and General Services, Planning and Research Section

Director General's office, Deputy Director General's office, Assistant Director Generals' offices, Directors' offices, Consultants' offices, Academic Staff offices, Non-academic Staff offices and discussion rooms, etc.

o Library and Information Building - total floor area: 2,537m² <Phase 1>

houses rooms relating to the Library and Documentation, Publication and Special Education Resource Centre

Directors' offices, Academic Staff offices, Non-academic Staff offices, stack room, reading room, training room, behaviour monitoring room and examination rooms, etc.

o Working Building - total floor area: 2,627m² <Phase 2>

houses rooms, workshops and laboratories relating to the Computer

Education and Audio-Visual Media Centre and Curriculum Design and Development Centre

Directors' offices, Academic Staff offices, Non-academic Staff offices, computer training room, software development room, Consultants' rooms, studio, teaching material production room, science laboratories and workshops (domestic science, handicrafts and metalware), etc.

- o Training Building - total floor area: 2,739m² <Phase 2>
houses rooms relating to the Staff College for Educational Administration, Institute of Distance Education and Institute of Teacher Education
Directors' offices, Consultant's offices, Academic staff offices, Non-academic staff offices, training rooms, staff rooms and course material distribution room, etc.
- o Covered Way, etc. - total floor area : 408m² <Phase 2>
- o Total Floor Area : 9,992m²

(2) Equipment

The outline of the equipment required to implement the activity plans of the NIE is as follows.

- ① Institute of Teacher Education (Special Education Resource Centre)
 - equipment to monitor behavior (visual and sound response monitor)
 - examination equipment
- ② Library and Documentation
 - equipment for audio-visual media presentations
- ③ Computer Education
 - computer system for training purposes
- ④ Audio Visual Media Centre
 - studio video system
 - video equipment for outside use
 - video editing equipment
 - dubbing equipment
 - studio lighting equipment
 - equipment for still photography and slides (including darkroom equipment)

- equipment for production of teaching materials using OHP
 - editing equipment for loan
- ⑤ Publication
- plate-making equipment
 - binding equipment
 - simple printing machines (rotary presses)
 - copiers
 - darkroom equipment for photo engraving
- ⑥ Laboratories
- training and research equipment for physics
 - training and research equipment for chemistry
 - training and research equipment for biology
- ⑦ Domestic Science Workshop
- cooking and sewing equipment
- ⑧ Handicrafts Workshop
- wood working and metal working equipment

3.3.5 Management and Maintenance Plans

(1) Management Plan

Following the completion of the construction work under the Project, the new buildings will be handed over to the Government of Sri Lanka and will be managed by the NIE as part of an independent national research institute to smoothly conduct training and research activities in line with the objectives of the NIE described in 3-3-2. The NIE will continue to be considered an organization of the MOE in terms of its administration and budget.

Although the provision of technical cooperation by the Government of Japan has also been requested in addition to the provision of facilities and equipment under the Project, the Sri Lankan side must establish a proper plan and system for the NIE's own management and maintenance of the facilities and equipment.

In principle, the External Services Section of Administration and Finance Division will be responsible for the management and maintenance of the NIE.

Full-time engineers and operators should be employed for the building service facilities and the establishment of maintenance agreements with the local agents of the manufacturers is extremely important in view of the regular maintenance, inspection and repair of the various equipment.

The training and research facilities of the NIE will be of the highest among all educational institutes in Sri Lanka with the completion of the Project. The provision and upgrading of full-time engineers such as computer, audio-visual and printing machine operator are strongly desired in view of the importance of the NIE's planned activities. Moreover, maintenance staff should participate in equipment installation and test operation to obtain a proper understanding of the building service facilities and equipment for smooth maintenance following the handing over of the new buildings to the Sri Lankan side.

(2) Facility Maintenance Plan

1) Buildings

The main points in regard to building maintenance are daily cleaning, the repair of worn or damaged parts and security to ensure building safety and security.

Daily cleaning will have a favourable effect on the attitude of those using the buildings and is also important to maintain the necessary level of cleanliness for the research facilities. It also leads to the early discovery of damage and equipment breakdown and subsequent early repair, thereby prolonging the life of building service equipment and research equipment.

Repair work mainly consists of the repair or renewal of exterior and interior finishing materials which protect the buildings. Based on Japan's experience, it is believed that remodelling or partial rebuilding will be required every 10 years due to changes in activities and/or staff increases. The regular inspections and repairs required to prolong the life of the buildings will be described in detail in the maintenance manuals to be presented to the Sri Lankan side at the time of handing over the buildings and are outlined below.

Outline of Regular Building Inspections

(Exterior)

Repair and repainting of exterior finishings	every 5 years
Inspection, repair and repainting of roofing	inspection: annually others: every 5 years
Inspection and repair of roof waterproofing	inspection: annually repair: as required
Cleaning of gutters and drainage facility	monthly
Inspection and repair of sealing material around doors and window frames	annually
Painting of exterior doors and window frames	every 5 years
Inspection and cleaning of drainage ditches and manholes	monthly
Repainting of perimeter fencing	every 5 years
Gardening	as required

(Interior)

Alteration of interior finishings	as required
Repair and repainting of interior walls	as required
Replacement of ceiling materials	as required
Adjustment of doors and windows	annually
Replacement of hardware	as required

2) Building Services

Not only regular operation control and inspection but also the repair and exchange of parts will be required for the proper maintenance of the building services. The life of building service equipment can definitely be extended by proper operation and regular inspection, adjustment, cleaning and repair. The safety of this equipment must be secured by measures preventing breakdowns and accidents without causing damage to the buildings. Overhauls and the exchange of worn parts must be conducted pursuant to the maintenance manuals at the time of regular inspection.

Maintenance staff must have an exact understanding of the system designs and capacities, etc. so that they can prevent accidents. Full-time engineers should, therefore, be provided for each of the electricity, air-conditioning, plumbing and special equipment fields. Moreover, these engineers should undergo on-site training from the equipment installation and test operation stages to obtain a thorough knowledge of the equipment for

which they will be responsible. Maintenance manuals will be provided at the time of project completion and the main service equipment lives are as follows.

Lives of Main Building Service Equipment

Electricity	
Generator	10 - 15 years
Panel Boards	10 - 15 years
Fluorescent Lamps	5,000 - 10,000 hours
Incandescent Lamps	1,000 - 1,500 hours
Telephone Exchanger	10 years
Public Address Equipment	10 years
Plumbing	
Pumps, Pipes and Valves	10 - 15 years
Tanks	15 - 20 years
Sanitary Fixtures	25 years
Fire-Fighting Equipment	20 years
Gas Apparatus	6 years
Sewage Treatment Equipment	7 years
Air-Conditioning	
Pipes	10 - 15 years
Fans	10 - 15 years
Air-Conditioners	5 - 10 years

(3) Equipment Maintenance Plan

The regular maintenance of research and training equipment will be of crucial importance to ensure the expected achievements of the NIE and much of this equipment will require careful handling in view of its fragility, precision parts and adverse effects due to vibration, impact, temperature and humidity, etc.

In view of the above, it will be realistic to introduce a system whereby the NIE's own engineers conduct regular maintenance, inspection and repair while making maintenance agreements with the local agents of the manufacturers for some equipment. The frequency of regular inspections for each type of equipment is given below and further details will be included in

Table 3-3-5 Annual Budget for Salary of Expanded Divisions under the Project

(Unit: Rs)

Division Name	Fiscal Year									
	1987	1988	1989	1990	1991	1992	1993	1994	1995	
1. Professional Development of Educational Personnel										
①. Staff College for Educational Administration	80,041	852,748	2,237,000	3,067,900	938,022	1,031,824	1,135,006	1,248,506	1,373,356	
②. Institute of Distance Education	68,972	1,131,124	3,567,000	3,867,000	4,328,170	4,760,987	5,237,086	5,760,794	6,336,874	
③. Institute of Teacher Education	1,129,609	1,495,415	2,380,000	3,704,660	4,400,000	5,000,000	5,600,000	6,000,000	6,500,000	
2. Educational Technology										
①. Library and Documentation	51,969	304,862	820,800	1,045,960	1,207,580	1,328,338	1,461,172	1,607,289	1,768,018	
②. Computer Education	211,821	386,348	816,000	1,021,000	1,253,560	1,378,916	1,516,808	1,668,488	1,835,337	
③. Audio Visual Media Centre	8,905	405,226	1,319,125	1,467,682	1,626,240	1,788,864	1,967,750	2,164,525	2,380,978	
④. Publication	-	-	625,000	1,249,300	1,315,000	1,330,750	1,347,290	1,364,654	1,382,990	
3. Administration and Finance										
①. External Services	141,010	245,815	438,000	481,800	529,980	582,978	641,275	705,400	775,940	
4. Secretarial and General Services										
①. External Services	373,345	180,455	1,388,000	1,526,800	1,679,480	1,847,428	2,032,170	2,235,387	2,458,926	
5. Planning	66,830	208,686	463,000	505,000	590,755	679,369	781,273	937,528	1,125,034	
6. Research	21,410	488,204	1,326,000	1,589,410	1,943,260	2,137,586	2,351,345	2,586,479	2,845,127	
Total	2,153,912	5,698,883	15,379,925	19,526,512	19,812,047	21,867,040	24,071,175	26,279,050	28,782,580	

the relevant maintenance manuals to be presented to the Sri Lankan side at the time of handing over the equipment.

Outline of Regular Equipment Inspections

	Internal Cleaning	Maintenance Inspection	External Maintenance
Computers	daily	monthly	as required
Large Power Tools	daily	monthly	annually
AV Equipment	daily	monthly	annually
Printing Equipment	daily	weekly	annually
Special Education Equipment	daily	monthly	as required

(4) Trial Calculation of Maintenance and Operation Expenses

The maintenance and operation expenses necessary for the Sri Lankan side upon completion and handing over the facilities constructed by the grant assistance are calculated on a trial basis. Expenditures are classified into personnel expenses, operating expenses of facilities, maintenance expenses of facilities and equipment and expendables expenses.

1) Personnel Expenses

The personnel expenses at the time of opening of the facilities is calculated based on the personnel plan of NIE in accordance with salary data of NIE. The number of staff to be assigned to the expanded divisions under the Project will be 334.

Personnel expenses (1992) 21,867,040 Rs/year

2) Operating Expenses of Facilities

Annual operating expenses are calculated by assuming routine usage quantities of electricity, water and LPG.

① Electricity charge

● Base of calculation

Working hour : 8 hours/day, 25 days/month

● Assumption of electricity consumption

a. Lightings and outlets

Headquarters Building

$$1,715\text{m}^2 \times 30\text{VA/m}^2 \approx 51 \text{ KVA}$$

Library and Information Building

$$2,525\text{m}^2 \times 40\text{VA/m}^2 \approx 101 \text{ KVA}$$

Workshop Building

$$2,228\text{m}^2 \times 30\text{VA/m}^2 \approx 67 \text{ KVA}$$

Training Building

$$2,994\text{m}^2 \times 30\text{VA/m}^2 \approx 90 \text{ KVA}$$

Outdoor Lighting \approx

$$8 \text{ KVA}$$

b. Air conditioners

$$2,173\text{m}^2 \times 80\text{VA/m}^2 \approx 174 \text{ KVA}$$

c. General power \approx

$$95 \text{ KVA}$$

Total

$$586 \text{ KVA}$$

● Assumption of maximum electricity consumption

$$58\text{KVA} \times 0.65 \approx 381 \text{ KVA}$$

● Electricity charge calculation

a. Demand charge

$$381\text{KW} \times 115\text{Rs/KW} \approx 43,815 \text{ Rs/month}$$

b. Unit charge

$$586\text{KVA} \times 0.65 \times 8 \text{ hours} \times 25 \text{ days} \times 0.4 \times 1.5\text{Rs/KWH}$$

$$\approx 45,708 \text{ Rs/month}$$

c. Fixed charge

$$\approx 200 \text{ Rs/month}$$

$$a + b + c = 43,815 \text{ Rs/month} + 45,708 \text{ Rs/month} + 200 \text{ Rs/month}$$

$$\approx 89,700 \text{ Rs/month}$$

Total : 89,700 Rs/month × 12 months = 1,076,400 Rs/year

② Water charge

As the facilities is supplied with water from the well within the project site, water charge is assumed to be zero.

③ LPG charge

a. Assumption of the quantity used

$$8.64\text{Kg/day} \times 25 \text{ days} = 216 \text{ Kg/month}$$

b. LPG charge calculation

Use charge : 500 Rs/40 Kg

$$216\text{Kg/month} \times 12\text{month} \times 500\text{Rs}/40\text{Kg} = 32,400 \text{ Rs/year}$$

3) Maintenance expenses of facilities and equipment

① Maintenance expenses of buildings

The maintenance and repair expenses of buildings vary greatly by the number of years elapsed. Annual average repair cost seen in terms of a thirty years span is estimated on the basis of 50 Rs per floor area.

$$50 \text{ Rs/m}^2/\text{year} \times 9,980\text{m}^2 = 499,000 \text{ Rs/year}$$

② Maintenance expenses of mechanical systems

The repair expenses of mechanical systems is small during the first five years or so after completion but replacement of parts and equipment becomes necessary thereafter. the annual average repair cost seen in terms of a ten year span is estimated to be around 1.5% of the initial cost of mechanical systems as follows.

$$8,040,000 \times 1.5\%/\text{year} = 120,600 \text{ Rs/year}$$

③ Maintenance expenses of research and training equipment

The maintenance expenses of research and training equipment are small in the first couple of years after installation but gradually rise with the number of years used. According to the general practice in

Table 3-3-6 Annual Budget for Training Operation of Expanded Divisions under the Project

(Unit: Rs)

Division Name	Fiscal Year									
	1987	1988	1989	1990	1991	1992	1993	1994	1995	
1. Professional Development of Educational Personnel										
①. Staff College for Educational Administration	362,796	2,420,226	992,904	1,489,356	2,052,472	2,257,721	2,483,494	2,737,845	3,005,031	
②. Institute of Distance Education	672,966	29,150	2,672,200	3,744,700	2,787,450	2,951,650	3,126,120	3,312,220	3,510,940	
③. Institute of Teacher Education	2,074,534	1,373,909	2,650,000	6,300,000	6,000,000	7,400,000	8,600,000	10,200,000	12,400,000	
2. Educational Technology										
①. Library and Documentation	12,960	38,524	40,000	50,000	50,000	not decided	not decided	not decided	not decided	
②. Computer Education	74,199	69,537	305,000	726,000	750,000	not decided	not decided	not decided	not decided	
③. Audio Visual Media Centre	882	113,067	90,000	80,000	25,000	30,000	35,000	40,000	45,000	
④. Publication	-	-	50,000	-	30,000	30,000	30,000	30,000	30,000	
3. Administration and Finance										
①. External Services	-	-	-	-	-	-	-	-	-	
4. Secretarial and General Services										
5. Planning	-	35,605	100,000	150,000	250,000	300,000	325,000	350,000	400,000	
6. Research	-	-	280,000	250,000	524,480	576,928	634,620	698,082	767,890	
Total	3,198,337	4,080,018	7,180,104	12,790,056	12,469,402	13,546,299	15,234,234	17,368,147	20,158,861	

Japan, the annual maintenance expense is assumed to be 2% of the equipment cost during the initial five years, 4% during the next five years.

During the initial five years	718,000 Rs/year
During the next five years	1,436,000 Rs/year

4) Expendables expenses

Varies greatly depending on the condition of activities. The degree of utilization of equipment is assumed to be equal of the general degree of utilization in Japan.

① Laboratory equipment

a. Glass ware (supplement 20% of glass ware per year)	115,000 Rs/year
b. Reagents (supplement 50% of reagents per year)	183,000 Rs/year

② Printing and Copy machine

Paper, inck, etc.	2,559,000 Rs/year
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5) Total of trial calculations

1) Personnel expenses	21,867,040 Rs/year
2) Operating expenses of facilities	1,108,800
3) Maintenance expenses of facilities and equipment	1,337,600
4) Expendables expenses	2,857,000

Total	27,170,440
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As above, the annual operation and maintenance expenses are calculated to be about 27,200,000 Rs, which is about ¥ 105,000,000 when converted into Japanese yen.

Table 3-3-7 Annual Budget for Research Operation of Expanded Division under the Project

(Unit: Rs)

Division Name	Fiscal Year									
	1987	1988	1989	1990	1991	1992	1993	1994	1995	
1. Professional Development of Educational Personnel										
①. Staff College for Educational Administration	1,882,153	42,347	100,000	200,000	500,000	550,000	605,000	665,500	732,050	
②. Institute of Distance Education	170,000	-	200,000	200,000	210,000	215,000	215,000	215,000	215,000	
③. Institute of Teacher Education	650,000	650,000	900,000	1,137,000	7,700,000	11,000,000	15,100,000	19,400,000	26,100,000	
2. Educational Technology										
①. Library and Documentation	-	-	10,000	15,000	50,000	50,000	50,000	50,000	50,000	
②. Computer Education	-	-	-	-	not decided	not decided	not decided	not decided	not decided	
③. Audio Visual Media Centre	-	9,936	50,000	60,000	125,000	155,000	55,000	55,000	45,000	
④. Publication	-	-	-	-	30,000	30,000	30,000	30,000	30,000	
3. Administration and Finance										
①. External Services	-	-	-	-	-	-	-	-	-	
4. Secretarial and General Services										
5. Planning	-	-	55,000	75,000	100,000	50,000	-	60,000	75,000	
6. Research	33,182	476,014	900,000	591,200	360,000	360,000	372,500	372,000	560,000	
Total	2,735,335	1,178,297	2,215,000	2,278,200	9,075,000	12,410,000	16,427,500	20,847,500	27,807,050	

Of the operating expenses for the planned activities of the facilities to be expanded under this project, the budgets for training and for research are planned for each division as shown in Tables 3-3-6 and 3-3-7, respectively. The cost of training conducted at the NIE Maharagama Campus was shared as follows in the past, and application of the same method of sharing is anticipated for the future.

- Training fees : NIE
- Traveling expenses : Provincial directors
- Hotel accommodation : NIE
- Daily allowance : Provincial directors

