

Peru : Educational Reform

Analysis and Projects

Volume I

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Unesco

FOREWORD

This Report is a confidential document prepared for the Government of the Republic of Peru under the Cooperative Agreement between Unesco and the International Bank for Reconstruction and Development. Its object is to study the development of the educational system and to identify educational projects considered essential for the economic and social development of the Republic of Peru and which could be financed by external aid, particularly by the Bank and the International Development Association. The recommendations presented, however, are those of the Unesco Secretariat and in no way commit the Bank or the Association.

This Report presents the conclusions reached by the Unesco Secretariat after consideration of the information provided by the Project Identification Mission which visited Peru in September and October 1971. This mission consisted of Mr. D. Caselli as leader (general education), Mr. B. Kluchnikov (economist), Mr. P. Ovadias (technical education) and Mr. Y. Tencalla (agricultural education), all Unesco staff members.

I trust that this Report will prove a useful contribution to the efforts being made by the Government of Peru to improve the planning of its educational development, and to the mobilization of increased financial resources for the promotion of this development.

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Director-General
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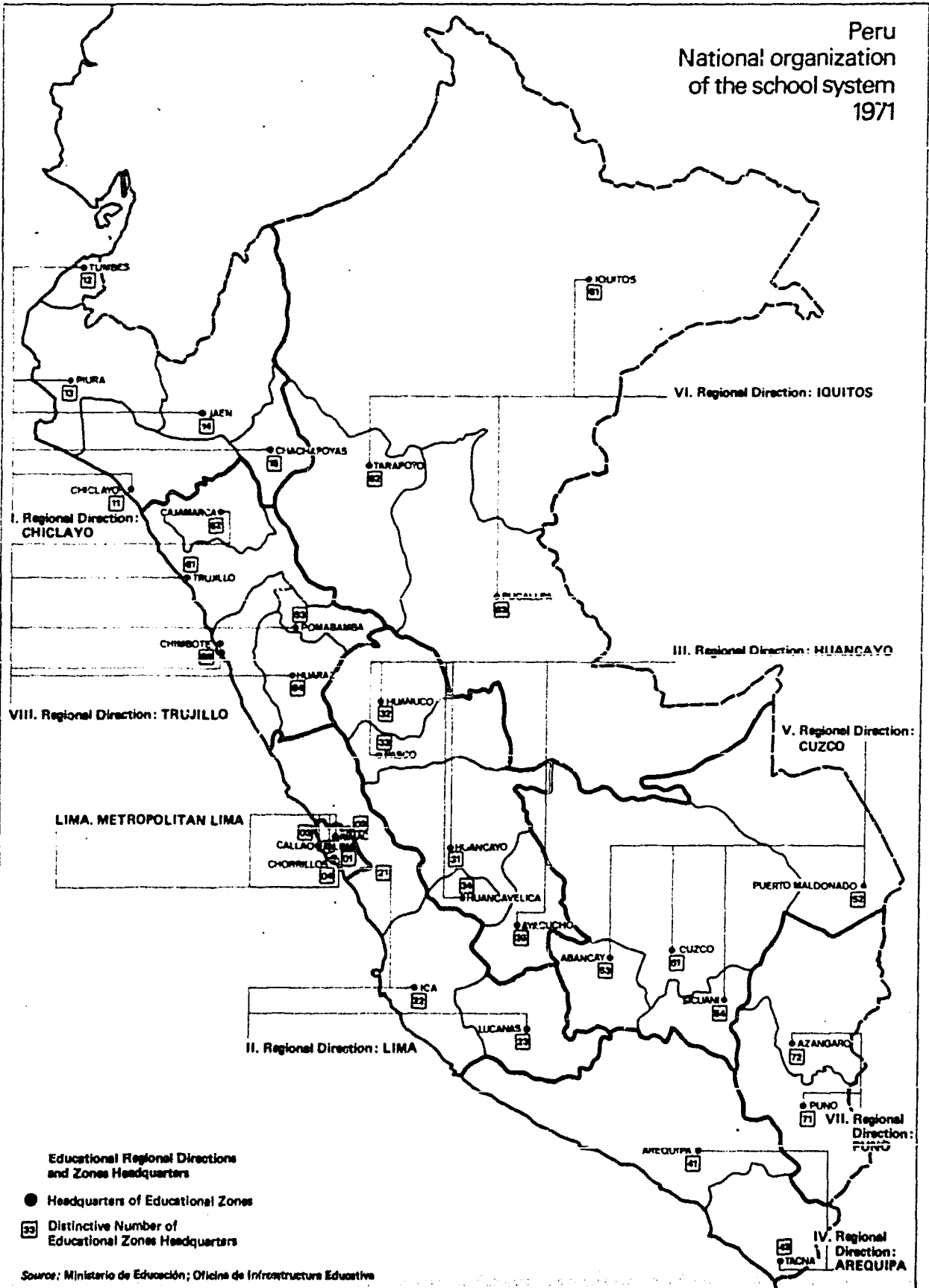
BASIC DATA

1. <u>Area</u>	1,285,216 sq.km.
Cultivable land	28,243 sq.km.
2. <u>Population</u> (mid-1970 estimate)	13,600,000 inhabitants
Rate of population growth	3.1 per cent
Rural population (1969 estimate)	48.1 per cent
Population under 15 years of age	45.0 per cent
Employment (1970)	4,067,000
Unemployment (1970)	201,000 or 4.7 per cent of the labour force
3. <u>Currency Unit</u>	1 US \$ = 38.7 Soles
4. <u>GNP</u> (at current prices, million Soles)	214.3
Per capita GNP	US\$ 365
Real growth of GNP (per cent)	<u>1968</u> <u>1969</u> <u>1970</u>
	1.5 1.7 1.7
Projected GNP growth (1971-75)	7.5 per cent
5. <u>Total Central Government Expenditure</u> (1969, in million Soles)	28,667
Public expenditure on education (in million Soles)	9,331
Central Government expenditure on education (in million Soles)	7,778

6. Education - 1970

Level	Total Enrolments	%
Pre-primary	86,000	2.4
Primary	2,664,100	74.6
Secondary:		
general	576,600	16.1
industrial	52,214	1.5
commercial	50,300	1.4
agricultural	15,754	0.4
Intermediate:		
industrial)	2,225) 0.07
commercial)		
agricultural	about 390	
Teacher training	about 20,000	0.6
University	105,600	3.0
TOTAL	3,573,183	100.0

Peru National organization of the school system 1971



(iv)

S U M M A R Y

1. The Government of Peru has embarked upon a significant programme of social and economic change with the reform of the educational system constituting a keystone in this process of national development. The intention is to relate closely education with the world of work through the introduction of work orientation in the programme of the basic education cycle and the inclusion of work experience in the upper secondary curriculum. The educational reform is to be phased with a primary stage consisting of structural changes and reformed institutions in selected localities with the secondary stage involving the generalization of the reform throughout the country.

2. This Report supports this concept of phased development based on a vector planning approach as being the most suitable method for avoiding the constraints of a fixed target date of implementation, and outlines a project for external financing, which would supply elements largely based on a geographical distribution of facilities for the introduction of the first phase of the educational reform.

3. The estimated costs of the project excluding technical assistance are as follows:

<u>Elements</u>	<u>US \$</u>
1. Basic Education	24,180,000
2. ESEPs	39,017,300
3. CECAPEs	772,900
4. Teaching Improvement	709,000
5. Instructional Materials Production Centre	<u>900,000</u>
TOTAL	<u>US \$ 65,580,100</u>

(v)

LIST OF ABBREVIATIONS

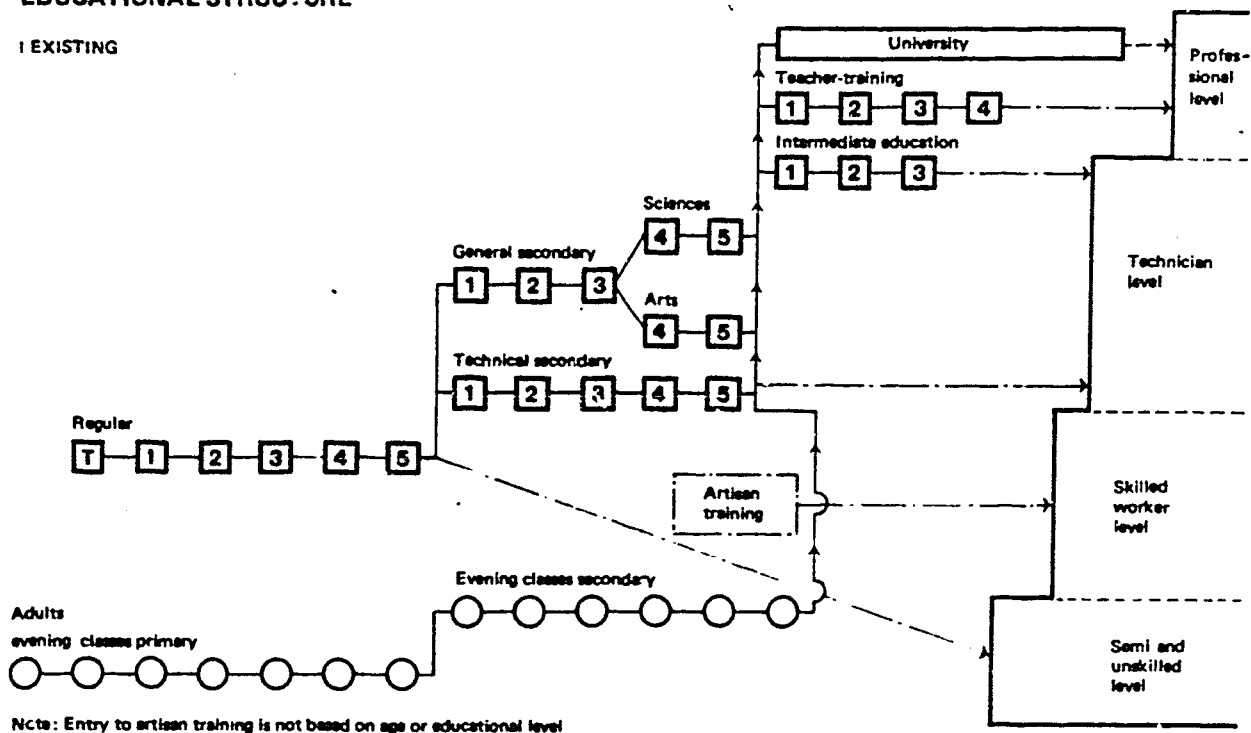
CECAPES	Centro de Calificación Profesional Extraordinaria
CENCIRA	Centro Nacional de Capacitación e Investigación para la Reforma Agraria
CONUP	Consejo Nacional de la Universidad Peruana
ESAP	Escuela Superior de Administración Pública
ESEP	Escuela Superior de Educación Profesional
INAE	Instituto Nacional de Altos Estudios
INTE	Instituto Nacional de Teleeducación
ONDECOOP	Oficina Nacional de Desarrollo Cooperativo
ORYRZA	Oficina de Reconstrucción y Rehabilitación de la Zona Afectada
SAIS	Sociedad Agrícola de Interés Social
SENATI	Servicio Nacional de Aprendizaje y Trabajo Industrial
SERH	Servicio del Empleo y Recursos Humanos
SINAMOS	Sistema Nacional de Apoyo a la Movilización Social

EDUCATIONAL STRUCTURE

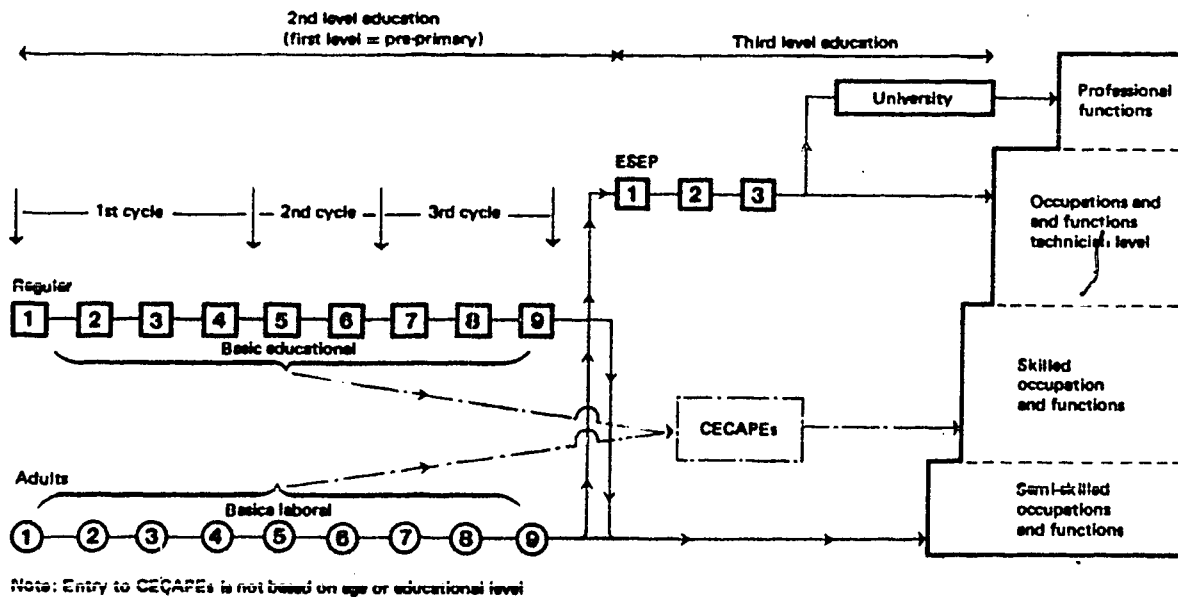
(vi)

EFM/44
CHART N° 2

I EXISTING



II REFORM PROPOSALS



CHAPTER I

EDUCATIONAL REFORM

Introduction

1. The Peruvian Government is presently engaged in a programme of social reform aiming at changing social conditions which have tended to inhibit economic growth and national development. Education is inevitably linked to this reformation of the social fabric through the need to develop and reorientate individual attitudes, aspirations and skills.
2. Reform of the educational system has thus to be considered as an important instrument for overall social change and so should be viewed in relation to the other mechanisms of change such as industrial and agrarian reform, and thus be placed within the framework of the totality of national reform.
3. Two successive groups of advisors have assisted the Government in producing proposals for the reform of education, their proposals have been included in the general report of the Peruvian Educational Reform. These proposals have already been translated into an Educational Law draft submitted by the Ministry of Education for public discussion, and will probably be approved by the Cabinet shortly.
4. The description and discussions that follow in this and subsequent chapters, while following the probable general line of expected educational changes, should therefore not be taken as being based on an absolute or final intention of the Government.

The Reform - Its Function

5. The Reform Commission in its deliberations sought an educational system that could perform the following functions:
 - a) afford equal educational opportunities to all, irrespective of socio-economic conditions, based on an orientation for the world of work and towards national development;
 - b) promote community and individual participation in education and so stimulate self-education;

c) install a sense of civic and social responsibility including the development of democratic attitudes and the provision of a positive set of values regarding the role of the family.

6. The Commission also considered that the system in itself should be efficient and systematic but retain sufficient flexibility to adapt to local conditions. While it will operate both through formal and informal activities, it should, in addition, be open to continuing revision, adjustment and innovation.

Proposed Structure and Content

7. The Reform Commission considers that if education is to fulfil the above-mentioned functions, then the present system will need basic changes in structure and content.

8. In terms of structure, the principal suggested changes are a reduction in the number of levels of education in the formal system from the current four levels to three, and in the informal system, a streamlining and coordination of existing dispersed types of adult education.

9. These structural changes are illustrated in a diagrammatic manner by Chart II which is situated at the beginning of this chapter, while the proposed detailed changes in structure and content are described by level and area in the paragraphs which follow.

"First Level" or Pre-school Education (ages 1-5)

10. Pre-primary education ("educación inicial") will have the objectives of counterbalancing the negative influence of adverse economic, social, cultural and nutritional conditions in the early stages of the children's global development and of assisting families in bringing up their children. These objectives will be reached through educational activities closely coordinated with housing, labour, health and other sectoral local programmes, and carried out by the active participation of the local communities who will hold almost exclusive responsibility for these activities. Intentions are not only to increase the number of children at present served (10 per cent of the 5 year age group in 1970), but also to broaden this service down to younger age groups and to include more participation from the lower social strata.

11. Details of the modern curriculum to be followed are at present at an advanced stage of preparation.

"Second Level" of Education or Basic Education (grades 1-9)

12. This level will integrate into one unit the former primary school (6 grades) and lower secondary education (3 grades). The three cycles of this second level of education (grades 1-4; grades 5-6; grades 7-9) are to provide the basic education required to face successfully all adult responsibilities, including the world of work. Eventually, all three cycles will be compulsory, but in the foreseeable future this will apply only to grades 1-6.

13. In terms of academic achievement, these three cycles will be equivalent to the present grades 1-11. The curricula will include a gradually increasing percentage of various practical activities with the intention to develop a positive attitude towards work, reaching probably up to 7 weekly periods out of the estimated 35 in grades 7-9.

14. Two forms of basic education are contemplated, viz. "básica regular" (formal) for day pupils (under 15 years of age) and "básica laboral" (informal) for adult evening students (15-39 years of age). Though identical in academic value and length they will differ regarding content, methods, emphasis on practical activities, standards used for the pupil flow and the internal subdivision in cycles. In the "básica laboral" the traditional literacy programme will form the first cycle (2 years), while the remainder will be the equivalent of the present evening primary and lower secondary schools.

15. The nine years of "educación básica regular" imply a radical change of the present primary and lower secondary education in terms of objectives, content and methods. The nine years of "educación básica laboral", mean a substantial change both in curricula and structure since they integrate literacy programmes into informal but qualifying education and shorten the present duration of both primary and secondary evening courses. The modern curricula to be used in basic education are at present being prepared.

"Third Level" of Education (grades 10-16 and over)

16. Higher education will be divided into three cycles (grades 10-12; grades 13-16; post-graduate), corresponding to the levels of technician education, professional education and post-graduate work.

17. Grades 10-12: The first cycle of higher education, called "Escuela Superior de Educación Profesional" (ESEP) will be open to all basic education graduates. It will precede the university, replacing on the one hand

the former upper secondary cycle (grades 10-11) enlarged by one year, and absorbing on the other the technician training formerly given as a parallel stream to the university at grades 12-14/15. In some cases the possibility of additional specialized training (post-ESEP) has also been contemplated. In terms of content the ESEP will concentrate on occupational training and not offer an exclusively university preparatory stream. Its final certificate will, however, be of practical value in the labour market, and of academic value for entrance to any university field of studies.

18. The centres offering this cycle will preferably be polyvalent, offering professional training in several areas such as teacher training, industrial education, agricultural education, commerce, basic services. The school calendar will follow the pattern of semesters and promotion will be given on the basis of credits. This cycle will initially be offered as day courses for full-time pupils and as evening courses adequately adapted for working adults (15-39), while other supplementary ways (correspondence, radio, sandwich, summer courses, etc.) will be looked into and conveniently planned for later application.

19. Second cycle: The second cycle of higher education leading to the "licenciatura" and Master degrees is the first stage of the university system.

20. In both cases the courses will be shortened. In some specific fields the possibility of other certificates or diplomas has also been envisaged.

21. The draft of the Educational Law supersedes the transitional University Law passed by the present Government in 1969. While allowing a relatively large degree of freedom for the internal academic organization of each university, the Draft Law goes into the detailed definition of the organization of the Peruvian university system, reintroducing the 1/3 participation of students at national level in the University Assembly and Representative Council, at regional level in the Regional University Assembly and Representative Council, and at institutional level in the University Council.

22. The third cycle of higher education will consist of post-graduate studies leading to Doctor's degree, and will centre on research work. This cycle will be controlled and offered by a new institution called the National Institute of Higher Studies. When conditions allow, some universities may be authorized by the Institute to offer this cycle.

Vocational Training

23. All existing vocational courses offered by ministries other than the Ministry of Education and by private initiative (e.g. SENATI) as well as the comparatively few offered by the Ministry of Education ("artesanal" and "competencia") will be coordinated but not controlled by this Ministry. The courses will be completely independent and will not lead to an academic but to a vocational qualification. They will be very flexible in concept, length and in the way they will be offered, falling into the concept of informal education. They will cover the whole range of occupational levels and sectors and will either precede, upgrade or complement occupational qualification. The institutions offering such courses will be called "Centros de Calificación Profesional Extraordinaria" (CECAPEs).

Educational Extension Work ("Extensión Educativa")

24. In addition to the institutionalized type of educational activities of informal character such as those described above ("educación básica laboral" and CECAPEs) and to the various traditional types of activity such as those under the "Instituto Nacional de Cultura" and the "Instituto Nacional del Deporte", the educational reform also envisages specific educational activities of a very imaginative type, having no institutionalized form, and of an emergency or transitional nature, with the main objective of stimulating adequate local support and participation in the innovations which will gradually take place in most sectors of the local community's life. In very broad terms these activities can be summarized as being of informative and motivational character. Their function will be to diffuse the pertinent knowledge, to give the necessary stimulus and to qualify the participants in relation to every local programme carried out by each public sector.

25. The role played by the Ministry of Education through its corresponding Directorate ("Dirección de Extensión Educativa") will be to provide to each related public sector^{1/} the educational technical knowledge

^{1/} Excepted are the few cases in which this type of educational activity has already been incorporated in the sector through institutionalized technical units such as SINAMOS (directly under the Prime Minister), CENCIRA (under the Ministry of Agriculture), and CENACOOOP (under the National Office of Cooperative Development).

about the various possible ways, means and devices to diffuse the local programmes, develop the adequate psychological preconditions, and train the various levels of required participants in each programme. It will furthermore supply the various types of material (printed, audiovisual, etc.) considered adequate in each case.

Educational Radio and Television

26. On the basis of the already 11 year old modest experience - mostly under private initiative - in educational radio and television in several parts of the country, the educational reform intends to strengthen and expand the use of mass media in raising the educational level of the country.

27. The mass media (mostly radio and television) will basically offer two types of programme, viz. one adapted to the more institutionalized type of educational activity (formal and informal systems) and a second one along the lines of the educational extension work. In the first case the programmes will have either a supplementary character (replacing teachers in emergency situations) or a complementary one (as an additional teaching aid to raise the teachers' efficiency), both within and without the daily school hours, and will be directed either to the pupils or to the teachers. In the second case it will be of a more flexible nature, and adapted to the particular programmes falling under the educational extension work.

28. The educational radio and television programmes will be under the responsibility of the "Instituto Nacional de Teleducación" (INTE), which in 1971, through successive Government decrees, has been given institutional status of a non-regional executive body, under the direct responsibility of the "Dirección Superior" of the Ministry of Education. This body has been assigned total responsibility for the production of educational radio and television programmes, as well as for the organization and evaluation of the reception side of the programmes. It will also hold the main responsibility for the related experimentation as well as for the coordination of all resources (public and private, financial and technical) involved in such programmes together with partial responsibility for their transmission and for the evaluation of all public and private programmes.

Administrative Changes

29. The implementation of the proposed educational reform necessarily implies a change in the traditional administrative organization and management and the administration of the school system was reorganized in March 1971 in accordance with Presidential Decree No. 18799.

30. The administrative reform concentrates on a redistribution and identification of functions coupled to decentralized operational control. A continuous planning process is also included based on the use of long, medium and short plans at national, regional and institution levels.

31. Financial control is strengthened and budgeting improved; investigations into means of reducing capital and recurrent costs including the use of alternative methods such as mass media are foreseen. Other sources of finance such as local contributions and private participation will also be assessed.

32. National Level: The responsibilities of this national level are of a global nature, being normative in character and acting in an advisory capacity to the lower administrative levels. Exceptions are educational television, educational research and teacher improvement, which are centralized functions of an operational nature. Several councils have been established which will act as advisory bodies to the Minister on questions of policy as well as the coordination of all educational activities within the country.

33. Main technical advisory functions will be performed by the Planning, Supervision and Legal Affairs Office, while three Directorates (basic education, higher education and educational extension work) have been established.

34. Regional and Zonal Levels: The country has been divided into nine educational regions corresponding to specific geo-political areas grouping several departments and provinces. Each region has been sub-divided into a varying number of zones, amounting to a national total of 33 at present. The essential function of the Regional Directorates is to operate the schools in the region - excluding universities - adapting the norms established at the national level to the specific features of the area, through planning, direction, coordination and supervision of the educational activities as well as through administration of the personnel, physical and financial resources required for the operation. Zonal authorities constitute the subordinate level needed to operate the school system (see Chart I).

35. The administrative structure of each Regional Direction and Zonal Headquarters corresponds to that in the Ministry of Education, though on a smaller scale.

36. Local Level: There are two main innovations contemplated by the administrative reform at local level: community participation and integration of schools.

37. The community participation in education is based on the same concept that operates in agrarian and industrial reform; the intention is to stimulate interest for the local educational activities as well as to integrate the teachers into the local non-educational activities. It will include the participation of local authorities, parents, teachers, local institutions and agents of the various sectoral programmes operating in the area.

38. Coordination between educational institutions is foreseen as a method of linking together several schools of varying sizes within a given radius. To some extent it attempts to revive on a more solid basis and on a national scale the initially positive experience made several years before with the "núcleos escolares".

Legislation

39. The proposals of the Reform Commission and Council will become Government policy on education when the impending Educational Law has been passed. At present a carefully prepared Draft Law has already been made public for discussion and the suggestions and comments from all interested sectors in education will contribute to the final content of the Law.

CHAPTER II

THE SOCIAL AND ECONOMIC BACKGROUND

Population (see Annexes II.1-II.4)

1. While Peru, with a total land area of over 1.25 million square kilometres and an estimated population of about 13.6 million, is not apparently over-populated, the population growth rate of about 3.1 per cent a year has presented problems in certain rural areas.
2. Pressure on the available cultivable land, about 28,250 square kilometres, is high and poverty exists in some localities. Rural migration to towns such as Lima/Callao, Arequipa and Chimbote has resulted in an expansion rate of urban centres of about 4.5 to 5 per cent annually, with Lima and a few other urban centres exceeding this rate. The proportion of rural population to urban has thus shown a decrease leading to a recent figure of only 48 per cent of the population being considered as rural dwellers.
3. The population pattern is also marked by the large proportion, 45 per cent, of persons under the age of fifteen years, while currently about 25 per cent of the total population are enrolled into the formal educational system.
4. While Spanish is the principal language of Peru, at least 100 local languages exist. The majority of these, however, are very restricted and only two local languages are in widespread use. The principal one, Quechua, in one dialect form or another, is the everyday language of over two million people, while the second, Aymara, is more restricted.

Physical Features

5. The Cordillera de los Andes forms the backbone of Peru; this mountain chain runs north-west to south-east and divides the country into three basic geographical zones.
6. To the west of the mountain chain is the coastal area, which varies from 160 to 16 kilometres in width. The climatic conditions are dry and desert areas may be found. Fifty rivers, however, run through this area and while only a proportion of them normally reach the sea, the river valleys form centres for commercial agriculture, producing rice, cotton, sugar and horticultural crops. About one-third of the population of Peru resides in the coastal strip and this area contains the largest centres of urban development.

7. Eastwards of the Andes lies the Selva. This geographical area can be sub-divided into the Ceja de Selva foothill areas and the true Selva (tropical rain forest) which runs into the Amazonian lowlands. The Selva zone, low in population and lacking communications, contains about fifty per cent of the total land area of Peru. Forestry is important, but only small areas of land have so far been developed for agricultural purposes, the main crops being tropical and including tobacco, coffee, sugar, cocoa and bananas.

8. The third geographical area is the Sierra or highlands consisting of high plateaux separated by deep valleys. This area also is not heavily populated. Agriculture tends to be of a subsistence type, the principal crops being wheat, barley and potatoes. Livestock, however, is important and has development possibilities.

Agriculture and Agrarian Reform (see Annexes II.5-II.7)

9. In 1963 an agricultural survey of 17 million hectares showed an extremely unequal land distribution pattern in which 83 per cent of farm properties were smaller than 5 hectares in size and occupied only 5.5 per cent of the total area, while 0.2 per cent of farms were 990 hectares or larger and yet accounted for 69.7 per cent of the land.

10. In 1964 the Government enacted a law on agrarian reform aimed at raising rural employment and income and increasing production and productivity. This law was superseded in 1969 by a new agrarian reform statute coupled with a law which puts water resources under public control. While this new agrarian reform statute was aimed at similar goals to that of 1964, it envisaged a more rapid and extensive reorganization of the entire agricultural sector, including improvement of the insufficiently developed marketing mechanisms.

11. Under the new law the size of individual holdings is limited according to the type of land farmed, the maximum holding, for example, in coastal irrigated lands being about 15 hectares while grazing land holdings are based on the area needed to carry 5,000 sheep or their equivalent. Land holdings in excess of such fixed ceilings are subject to expropriation.

12. Between 1961 and 1968 some 8,400 families received holdings; since 1969 the rate has increased and by June 1971 an accumulated total of about 77,500 families had been affected.

13. Cooperatives and supervised credit play a large role in the agricultural sector in general and in the agrarian reform activities in particular, and are to be strengthened in the 1971-75 Agricultural Plan. This Plan aims at continuing and completing the agrarian reform process, increasing production and organizing more effective and stable marketing systems with the principal objective of improving the socio-economic conditions of the rural population.

14. The planned total investments for the agricultural sector for the period 1971-75 is targeted at 37,000 million Soles, the largest item being directed at irrigated projects. In the area of agrarian reform, a figure of a further 250,000 farm families is projected as the target for receiving entitlements to land.

15. While in 1969, agriculture and forestry contributed 14.4 per cent of the Gross Domestic Product, previous annual growth rates of this sector have been low. For the period 1964-67 for example, it was only 0.6 per cent per annum while during the period 1967-69, the sector declined by 0.3 per cent per annum. Since the beginning of 1970, however, this sector has shown considerable improvement and the annual growth reached 4.5 per cent; as a result agricultural development in the 1971-75 Plan has been based on an annual growth rate of 4.2 per cent.

16. The educational requirements of the agricultural sector can be divided into two broad categories. Firstly, the educational needs of the individual farmers and secondly the educational requirements for the technical manpower that provide services to the farmers.

17. Regarding educational requirements of the farmers, the programme of agrarian reform has important consequences due to its overall impact on the socio-economic environment of rural areas, for example every farmer affected by the agrarian reform process has to be associated with a cooperative. Thus, the farmer will be obliged to take part in decision-making and to participate in a communal effort. Previously, many of the new farmers worked on large estates and had little or no function in management. This means that a considerable reorientation in attitudes will be required, together with an awareness of the technical background necessary in a decision-making process. In educational terms, the requirements would, therefore, appear to be those of an increased work-oriented basic education for the farmers and their families together with an input of increased technical knowledge. This latter point is considered in more detail in Chapter IV of this Report.

18. The educational requirements of the technical manpower providing services to the farmers are dependent on the type of services to be rendered.

19. The development of the cooperatives, for example, involves a stage of co-administration between the farmers and the Ministry of Agriculture. During this preliminary stage, agricultural technicians and professionals play a direct part in the organizing and management of the farmer groups. This implies that the services rendered are of a direct management nature.

20. A second type of technical support, however, is necessary. This will act in the area of agricultural research and in the transmission of the results of the research through extension services to the farming level. This division of functions within agricultural support manpower has connotations for the training of agricultural technicians which will be discussed in Chapter IV of this Report.

The Fishing Industry (see Annexes II.8-II.11)

21. In less than two decades Peru has become the leading nation in the world fishing industry, and fish products are now the major component of national exports. This rapid expansion has been entirely based on the catching, processing into fishmeal and export of the anchoveta species which represent 99 per cent of the country's present total landings.

22. However, there is a general consensus of opinion which for ecological reasons feels that this area of fisheries has reached, if not already passed, its maximum level. The estimated maximum yearly sustainable yield of anchoveta is set at about 10 million tons but the 1970 landings exceeded this by over 2 million tons. It is therefore estimated that one quarter of the present capacity of both fishing vessels and processing plants is surplus to the industry's needs, with the result that some 350 skippers and engineers will shortly have to move from the anchoveta to the food fish sector.

23. In sharp contrast to the development of the anchoveta fisheries, the traditional food fish sector (1 per cent of the present total landings) has remained stagnant over the past ten years and the per capita consumption of fish has not kept pace with the country's population increase.

24. The Government development plan for the food fish sector has set a production target of 600,000 tons to be phased over a five year period; forty per cent of the production would be consumed by the domestic market and sixty per cent exported as frozen or canned fish. There are serious doubts as to the possibilities of implementing such a plan, the 600,000 tons figure being based on a global assessment (through egg counts) of the biological potential for all species, some not acceptable under present conditions, on either the domestic or international markets. A figure of 300,000 tons is suggested by certain biologists and professionals as a more realistic target which would represent an increase of some 100,000 to 150,000 tons over the present catch. Plans are already in hand to increase the catching and processing capacity to achieve this revised target, particularly through the utilization of existing fishing vessels which will have to leave the anchoveta sector.

25. In 1969 fishing contributed 1.9 per cent of the Gross Domestic Product. Growth rates on an annual basis were 3.7 per cent in the period 1964 to 1967 but declined in the period 1967-69 to a negative rate of -2.2 per cent. The 1971-75 Plan expects this sector to renew its growth and an annual growth rate of 4.8 per cent will be aimed at.

26. Training at the technician and vocational levels in fisheries is well developed and present facilities appear adequate to meet the technical educational requirements of this sector.

Industry/Mining

27. In 1969 manufacturing constituted 19.6 per cent and mining (including petroleum) 8.5 per cent of the Gross Domestic Product. Previous annual growths were in the period 1964-67, 8 per cent for manufacturing and 8.3 per cent for mining and for 1967-69, 3.4 per cent for manufacturing and 4 per cent for mining. In the case of mining, however, a sharp fall of prices in the international market decreased the value of output in the first six months of 1971 by an estimated rate of 12 per cent per annum. Industry continued to develop, however, with an estimated annual growth rate equivalent to 5 per cent.

1/ IHRD.

TABLE 1

SECTORIAL DISTRIBUTION OF GROSS DOMESTIC PRODUCT, 1964-1969

(in millions of Soles at 1963 prices)

Sector	Value			Annual rate of growth (average)		% of G.D.P.			1971-75 Plan	
	1964	1967	1969	1964-7	1967-9	1964	1967	1969	Annual rate of growth	% of 1975 GDP
G.D.P.	86,004	100,976	104,362	5.5	1.7	100.0	100.0	100.0	7.5	100.0
Agriculture, Forestry and Fishing	16,784	17,243	17,049	0.9	-0.5	19.5	17.1	16.3		
- Agriculture, Forestry	(14,946)	(15,195)	(15,091)	0.6	-0.3	(17.4)	(15.1)	(14.4)	4.2	12.4
- Fishing	(1,838)	(2,048)	(1,958)	3.7	-2.2	(2.1)	(2.0)	(1.9)	4.8	1.9
Mining (inc. petroleum)	6,425	8,170	8,844	8.3	4.0	7.5	8.1	8.5	5.7	6.3
Manufacturing	15,204	19,134	20,473	8.0	3.4	17.7	18.9	19.6	12.4	26.0
Construction	3,424	4,422	3,559	8.9	-10.3	4.0	4.4	3.4	6.6)	
Other	44,167	52,007	54,437	5.6	2.3	51.3	51.5	52.2	6.6)	53.3
-- Electricity, gas, water	(706)	(987)	(1,073)	11.8	4.3	(0.8)	(1.0)	(1.1)		
-- Housing	(4,901)	(5,372)	(5,721)	3.1	3.2	(5.7)	(5.3)	(5.5)		
-- Government	(6,936)	(8,243)	(8,576)	5.9	2.0	(8.0)	(8.2)	(8.2)		
-- Other	(31,624)	(37,405)	(39,067)	5.8	2.2	(36.8)	(37.0)	(37.4)		

28. Recent laws such as the General Law on Industries No. 18350, July 1970 and the Industrial Community Law No. 18384, September 1970 provide a framework for the modification of industrial structure, including the measures to be taken for the development of industry, the rules to be followed in State intervention and the modality of worker participation including profit sharing.

29. The main educational requirement of this sector is the continued and increased inflow of professional and technical competence, especially into certain developing industries, coupled with a raising of skill levels amongst the existing work force. The participation of workers in the management of industries implies the need for increasing the spread of basic education and also for ensuring that future entrants to the work force are educated towards work.

The Economy

30. As can be seen from the attached Table 1, the most important sector of the economy, based on 1969 data, was that of services, followed in order of importance by manufacturing, agriculture and forestry, and mining. The average annual growth rate of the Gross Domestic Product during the period 1964-67 was 5.5 per cent, falling during the period 1967-69 to 1.7 per cent. This drop was due to the application of a plan of stabilization which began to show results in 1970 when the growth rate rose to over 7 per cent. In the first six months of 1971 this trend continued showing a rate of 3.5 per cent, despite difficulties incurred in the fishing and mining sectors.

TABLE 2
STRUCTURE AND RATE OF GROWTH OF GDP (percentage)

	% of 1970 GDP	Annual Rate of growth of GDP 1971-5	% of 1975 GDP
Agriculture	14.5	4.2	12.4
Fishing	2.1	4.8	1.9
Mining	6.8	5.7	6.3
Manufacturing	20.9	12.4	26.0
Construction	4.3	{ 6.6	{ 53.4
Other Activities ^{1/}	51.4		
Total	100.0	(overall) 7.5	100.0

Source: Plan del Perú, 1971-75, 25 May 1971

^{1/} Commerce, power, public administration, transport, social services, banking tourism and other services.

31. The Five Year Plan 1971-75 aims at an annual growth rate of 7.5 per cent for the GDP which is based on differential rates for major sectors, foreseeing structural changes in the composition both of the future GDP and future labour force. The Plan puts emphasis on industry, implying an annual 12.4 per cent rate of growth compared to 6.6 per cent in tertiary activities. The Government is aware that the achievement of the targeted growth rates requires a large effort in mobilizing and efficiently using internal financial resources and already during the first six months of 1971 a large increase (16.5 per cent overall) in investments in the public and private sectors has occurred.

32. The GDP in 1970 reached 232.9 million Soles giving a per capita figure of 17,140 Soles or US \$440. This compares with a per capita figure of 16,100 Soles, (US \$416) in 1964, and 17,200 Soles (US \$444) in 1967, (both figures based on 1970 prices). The drop in per capita GDP was due to the fact that the growth rate of GDP was slightly lower than that of population during the period 1967-70. In terms of future growth rates of per capita GDP the projection below, based on indicated hypotheses, outlines probable trends.

TABLE 3

GROWTH RATE OF GROSS DOMESTIC PRODUCT

(per capita - 1971-75)

Annual Growth Rate G.D.P.	Population Growth Rates (Annual)		
	2.5%	3.1% ^{3/}	3.2%
7.5% ^{1/}	5.0%	4.4%	4.3%
5.6% ^{2/}	3.1%	2.5%	2.4%

^{1/} From National Five Year Development Plan

^{2/} Forecast from IERD Report

^{3/} Current population growth rate. Two other growth rates one lower and one higher have been projected for comparison purposes.

Human Resources and Manpower (see Annexes II.12-II.15)

33. Basic official data on the labour force is derived from a comprehensive survey carried out within the framework of the National Population Census of 1961. This data has since been updated by estimations made by the Ministry of Labour.

34. These estimates show that the division of the economically active population between the three economic sectors has changed since 1961 as follows:

	<u>1961</u>	<u>1970</u>
Primary Sector	49.9	46.9
Secondary Sector	18.6	19.8
Tertiary Sector	<u>31.5</u>	<u>33.3</u>
	<u>100.0</u>	<u>100.0</u>

35. These changes in proportion are linked to the varied growth rates of the sectors. During the period 1961-70, commerce (5.2 per cent) and industry (3.6 per cent) had the highest annual growth rates, while fishing (1.0 per cent), mining (1.8 per cent) and agriculture (1.9 per cent) showed slower growth.

36. Total employment has been growing at an annual rate of 2.5 per cent but this growth rate has been lower than that of annual population increase (3.1 per cent) and also than the growth of the economically active population (2.7 per cent). This differential in growth rates has resulted in growing unemployment which has been increasing at a rate of 7.5 per cent, resulting in an average of 11,000 additional persons per annum being unable to find work.

37. The composition of the labour force in terms of educational levels has shown significant change due to the considerable expansion of the educational system over the past decade.

TABLE 4

EMPLOYED OF 15 YEARS AND OVER BY LEVEL OF EDUCATION (percent)

Level	1961	1970
No formal education	33.9	24.2
Primary education	52.6	52.7
Secondary education	11.2	17.8
Higher education	2.3	5.3
Total	100.0	100.0

Source: DNEC IV Censo de Población, 1961;
SERH-CEMO Encuesta Nacional de Hogares, 1971

38. The above table illustrates the drop in the number of illiterates and rise in the proportion of persons with secondary and higher qualifications. In the latter case, the proportion has more than doubled.

39. Registered unemployment, as the result of overall improvements in the economic climate, fell from 5.9 per cent of the economically active population in 1969, to 4.7 per cent in 1970. While this proportion is considerably less than the average for Latin America (10-11 per cent), the fact that 60 per cent of the unemployed are in the age group 14-24 years presents a problem of considerable socio-economic importance. In addition, in urban areas the risks of unemployment are beginning to affect both secondary school leavers and university graduates.

40. Under-employment, however, is a graver problem. It is estimated that in 1970, almost two million persons were under-employed, a figure equivalent to 50 per cent of the total labour force. This problem affects in general, persons in services, petty trades, artisans and the unqualified.

41. A particular problem area is that of rural immigration. Unqualified and inexperienced people arrive in towns and accept temporary work on the chance of subsequent permanency. It is hoped, however, that the impact of the agrarian reform with its resulting improvement in socio-economic conditions in rural areas, may reduce the flow of rural inhabitants to the urban zones to an input which is more in balance with the creation of urban employment.

42. Despite the numbers of unemployed and under-employed, vacancies remain unfulfilled. For example, at the professional level, there is a demand for textile engineers and technologists, chemical engineers, processing engineers in expanding branches of manufacturing, marketing specialists and field agronomists and veterinarians. At the lower level, there is also a marked shortage of well-qualified workers which the output of SENATI can hardly satisfy.

43. In contrast to this picture of shortage is the current surplus of humanities graduates and construction engineers and the fact that only a few of the large output of several hundred technical schools can find jobs that correspond to their training.

44. It could, therefore, be deduced that certain imbalances occur between the educational system and employment demand and that these imbalances are present both in output patterns, as in the case of university graduates, and in the relationship of the educational content to work opportunities illustrated by the case of technical education.

45. The National Five Year Development Plan, 1971-75, deals with aspects of employment only in global terms.

TABLE 5
EMPLOYMENT GROWTH PATTERN, 1970-80

(in thousands)

	1970	1975	1980	Average Annual Growth Rate
Economically Active Population	4,268	5,065	6,024	3.5%
Employment	3,052	4,216	5,932	6.9%
Deficit	1,216	849	92	-
Deficit as % of Economically Active Population	28.5%	16.7%	1.5%	-

46. This planned growth of employment takes into account a 3.1 per cent average annual growth in productivity. Agriculture is expected to provide only 308,000 new employment opportunities by 1975 while manufacturing and artisanal development are expected to lead to the creation of 294,000 new vacancies between 1970 and 1975.

47. The fact that no official projections of the future labour force in terms of economic activity, occupations and educational levels exist and that present activities in this area are also dispersed and not directly connected to economic planning presents difficulties in relating educational requirements to labour market growth.

48. One detailed study on manpower requirements, however, was carried out in 1967 by national research workers and an OECD team. The results of this are summarized in an annex to this Report. Despite the fact that certain of the hypotheses on which this manpower study was based have now been superseded or changed by the targets set in the Five Year Development Plan, the methodology of this study and certain of its results present a sound basis for future work on manpower needs.

49. Although manpower studies are of relative value, as they can only provide forecasts of the order of stature of requirements and necessary corrective measures, they are nevertheless most valuable if gross discrepancies between education and economic development are to be avoided.

50. In the case of Peru where the society is in a process of change, manpower studies are difficult but extremely necessary. In a stable society, a study of the manpower market and employment opportunities alone is sufficient, but in the Peruvian context of educational reform and social change, the linkages between the labour market and education require particular attention.

51. The Educational Reform is based on change in the educational system notably at the grade 10-12 (ESEP) level where students will be prepared for direct entry into the labour market. In this case the quantitative and qualitative requirements that the graduates are to satisfy have to be taken into account, for example, with increased participation of workers in the running of enterprises more persons than previously needed may be required to exercise functions of a type traditionally assigned to technicians and so a large technician output will be required.

52. It is therefore suggested that future manpower studies should be based on the concept of linkage between education and employment and in the case of terminal education, for example universities and ESEPs,

consideration be given to the definition of the programmes of the different channels of occupational training in correlation with corresponding occupational opportunities (qualitative aspects) and to the proportion of enrolment in the various channels or sections of terminal educational cycles to projected employment opportunities (quantitative aspects).

53. In order to relate successfully labour market requirements to educational objectives, a functional classification system^{1/} is required which would correlate employment requirements expressed in terms of occupational functions and specialities to educational and training levels expressed in terms of qualification.

54. This type of approach to manpower studies will require collaboration between educators, economists and other representatives of economic and social sectors, and it is recommended that activities in this area should be centralized in one governmental department or institution in direct liaison with the economic planning authorities.

55. While the results of the National Census foreseen for 1972 should provide a base for quantitative work, it is evident that the changing conditions in Peru will entail a continuous process of research and adjustment of manpower forecasts and in this respect a prior requirement is a base line analysis in depth of the qualifications and job specifications of the present labour force.

^{1/} It should be noted that the International Classification of Types of Professions generally used by manpower services cannot be taken as functional when considering educational objectives.

CHAPTER III

IMPLEMENTATION OF THE REFORM

1. The present chapter deals with a limited number of specific problems relating to the implementation of the proposed reform measures - the problems being grouped into partly related questions of finance (capital and recurrent) and the training or retraining of teachers. Examination of the reform's implications in terms of finance and teachers indicates that 1978, the original date by which the reform was to be completed, is premature, so that the Government, rightly, is now thinking of phasing the reform over a longer period. This Report, in view of the discussion which follows, endorses careful phasing, but this endorsement should not be interpreted as a plea for caution in experimenting with alternative, less costly, strategies. Indeed, to break out of the bounds indicated by the figures which follow should be the continuing goal of an educational administration oriented towards innovation and change. For the purposes of analysis below a target date shortly following the original reform-completion date is required, and 1980 arbitrarily has been selected.

Finance

Recurrent Expenditure

2. From the standpoint of implications for recurrent expenditure, two aspects of the reform need to be distinguished: the establishment of new kinds of institutions, and changes in the rate of flow of students through the system. Even if there were no structural reform, the quantitative objectives of the Educational Development Plan would imply a considerable increase in recurrent expenditure. The establishment of new kinds of institutions, mainly the new ESEPs, further increases recurrent expenditure because of the employment of costlier teachers and the requirement for costlier supporting services (consumables and non-teaching personnel) in these institutions.

3. Table 1 shows the changing structure of public recurrent expenditure on each of the main levels of education.

TABLE 1

PLANNED PUBLIC RECURRENT EXPENDITURE BY LEVEL OF
 EDUCATION, 1971-80, IN MILLIONS 1970 SOLES

Level/Category	1971		1980	
	Soles	Per cent	Soles	Per cent
Pre-primary	122	1.0	353	1.9
Grades 1-6	4,078	39.1	4,747	25.2
Grades 7-9	1,389	13.4	3,654	19.5
"Laboral" 1-2	320	3.1	591	3.1
"Laboral" 3	452	4.3	1,178	6.2
Grades 10-12	509	5.0	2,886	15.4
Ed. Sup. 13-16	1,398	13.5	2,311	12.2
Other Higher	225	2.2	-	-
CECAPEs	118	1.1	310	1.6
Ed. Special	39	-	58	-
Administration	433	4.1	430	2.3
Aid to Private Sector	925	8.9	1,540	8.2
Other	448	4.3	822	4.4
TOTAL	10,456	100.0	18,880	100.0

Source: Plan Educación, Cuadro 3-24.

4. A sharply increased prominence for grades 7-9 and grades 10-12 is clearly indicated. The projection does not anticipate increases in rates of wages and salaries. If the latter increase at the same rate as expected GDP per capita (i.e. 2.5 per cent)^{1/}, if account is taken of the share of wages and salaries in projected recurrent expenditure for each educational level, and if administration and miscellaneous expenditure

^{1/} Population growth is estimated at 3.1 per cent and GDP growth is estimated at 5.6 per cent (see IERD, Economic Growth of Peru: Problems and Prospects, IERD, South America Dept. March 31 1971, Table 2.9)

is assumed to be constant, then total public recurrent expenditure on education in 1980 will be 22,805 million Soles (Table 2).

TABLE 2

PROJECTED PUBLIC RECURRENT EXPENDITURE IN 1980, BY LEVEL
OF EDUCATION, UNDER DIFFERENT ASSUMPTIONS ABOUT THE GROWTH
OF SALARIES

(millions 1970 Soles)

Level/Category	Constant Salary rates	2.5 per cent per annum increase in salary rates	5 per cent per annum increase in salary rates
Pre-primary	353	444	558
Grades 1-6	4,747	5,998	7,561
Grades 7-9	3,654	4,558	5,689
"Laboral" 1-2	591	742	932
"Laboral" 3	1,178	1,469	1,832
Grades 10-12	2,886	3,573	4,431
Ed. Sup. 13-16	2,311	2,774	3,354
CECAFES	310	386	482
Ed. Special	58	69	83
Other (Administration, etc.)	2,792	2,792	2,792
TOTAL	18,880	22,805	27,714

TABLE 3

PROJECTED GOVERNMENT RECURRENT EXPENDITURE ON EDUCATION
AS PERCENTAGE OF GOVERNMENT TOTAL RECURRENT EXPENDITURE

1980

Assumed Growth of Government Total Recurrent Expenditure	Reform and Constant Salary Rates	Reform and 2.5 % increasing Salary Rates	Reform and 5.0 % increasing Salary Rates
Assumption A	44.0	53.3	64.8
Assumption B	42.5	51.3	62.3
Assumption C	41.5	50.1	60.9
Assumption A:	IBRD projection to 1975 then 4.5 per cent growth		
Assumption B:	"	"	" 5.3 " " "
Assumption C:	"	"	" 5.8 " " "

Source: Table 2 above and IERD, Economic Growth of Peru: Problems and Prospects, IERD, South America Department, March 31 1971, p.59 and Table 5.2.

5. In Table 3 projected recurrent expenditure on education, following the reform is related to three alternative projections of Government recurrent expenditure. All three alternatives assume IERD's projections to 1975 and that revenue and expenditure will grow at the same rate subsequently; then, in addition, the first alternative assumes that this latter rate is the same as would be expected for revenue in 1970-75

if no new tax measures are proposed, the second assumes that it is the same as the actual rate for revenue in 1965-70, and the third assumes that it is the same as for the revenue in 1970-75, including new tax measures. The crucial relations are between projected recurrent expenditure on education and projected total current expenditure, since in any year between one-fifth and one-third of revenue will be required for transfer to the capital budget. Thus, even on the most favourable assumption about growth of total recurrent expenditure and recurrent expenditure on education, the latter in 1980 will account for 41.5 per cent of the former. This figure is unfeasible, and constitutes an impediment to early completion of the reform and a spur to closer examination of the structure of costs.

Capital Expenditure

6. As regards capital expenditure necessary for early complete implementation of the reform, caution in implementation again is emphasized as inevitable. Assuming IFRD's projections of public savings (i.e. revenue minus current expenditure) to 1975, and that subsequently (i) Central Government savings maintain a constant proportion of projected revenues which grow at 5.8 per cent (assumption C), and (ii) other public savings maintain a constant ratio to Central Government savings, then total public savings available for capital expenditure 1971 to 1980 will be 160.3 billion Soles (\$4.1 billion), as indicated in Table 4.

TABLE 4

TOTAL PUBLIC SAVINGS AND PLANNED PUBLIC CAPITAL EXPENDITURE ON EDUCATION 1971-80 (MILLION 1970 SOLES)

Year	Planned Public Capital Expenditure on Education (1)	Projected Total Public Savings (2)	(1)/(2) x 100
1971	0.6	9.9	6.1
1972	1.0	11.7	8.5
1973	1.3	13.0	10.0
1974	1.7	14.6	11.6
1975	2.2	16.0	13.8
1976	1.9	17.0	11.2
1977	1.5	17.9	8.4

TABLE 4 (cont'd)

Year	Planned Public Capital Expenditure on Education (1)	Projected Total Public Savings (2)	(1)/(2) x 100
1978	1.6	18.9	8.5
1979	1.6	20.1	8.0
1980	1.7	21.2	8.0
TOTAL	15.1	160.3	9.4

Source: Plan de Educación, Vol. VIII, Ministerio de Educación
 Lima, Peru; Cuadro 6-05; IERD (as per Table 2 above),
 Table 5.4.

7. Implementation of the educational reform under the original time schedule and according to (probably underestimated) unit costs would require a capital outlay estimated by the Ministry of Education at 15.1 billion Soles (\$390 million) in 1971-80 - just under one-tenth of projected total public savings (excluding possible foreign aid). This latter figure compares with the Government National Planning Institute's projected ceiling ratio of one-fiftieth (including foreign aid) in the period 1971-75 - the bulk of public investment being directed to productive sectors (agriculture, industry, transport and communications, fishing and mining). Thus, even accounting for possible foreign aid, unless the Government is considering a massive restructuring of investment priorities, implementation of the educational reform under the original time schedule probably is not consistent with planned public investment in other sectors.

8. From the standpoint of capital expenditure, early implementation of the reform additionally is impeded by the probable need to make improvements (workshops, laboratories, etc.) to present institutions which are necessary if the latter are to be incorporated into the new reformed educational system, and which have not been provided for in the 15.1 billion Soles referred to in paragraph 7. On the basis of figures supplied by the Ministry of Education concerning present classroom and equipment shortages, it is estimated that an additional 3.1 billion Soles (\$80 million) is required simply for the purpose of incorporating present institutions into the new system with facilities required by the objectives of the reform.

Teachers

9. Implementation of the reform under the original time schedule implies considerable requirements (i.e. additions to stock) for teachers. The Educational Plan did not project these requirements or supplies beyond specifying that the new ESEPs would, among other things, replace the present training colleges. At the present time there are two sources of supply: training colleges and universities, the former presently sending its output to grades 1-6 and grades 7-9 respectively, approximately in the ratio 1:1, and the latter sending its output of teachers to the secondary and primary schools respectively, approximately in the ratio 9:1. In the calculations which follow, for reasons which will become clear later in the discussion, it is assumed that the supply of teachers from the universities remains constant at the 1970 level. Under the reform, the function of the present training colleges is to be taken over by the new ESEPs.

10. For pre-primary and grades 1-6 the teacher requirements and supply situation are indicated in Table 5. It is assumed that no additions are made to present training colleges, since under the reform such institutions will become redundant as soon as the new ESEPs are opened. A small number of the "remainder" in Table 5, no more than 500, presently are supplied from the universities. The overall deficiency which still remains currently is met either by the employment of unqualified personnel or by increased "squeeze" on the present stock - expediencies which hardly can be continued much further as requirements increase.

TABLE 5

TEACHER REQUIREMENTS AND PROBABLE SUPPLY FOR PRE-PRIMARY AND GRADES 1-6
1970-79

Year	Requirements	Supply		
		T.T.C.	ESEPs	Remainder
1970	7,900	2,500	-	5,400
1971	7,100	2,000	-	5,100
1972	7,800	2,000	-	5,800
1973	7,800	2,000	-	5,800
1974	7,700	2,000	-	5,700

TABLE 5 (cont'd)

Year	Requirements	Supply		
		T.T.C.	ESEPs	Remainder
1975	7,000	2,000	-	5,000
1976	6,600	2,000	-	4,600
1977	7,200	-	7,200	-
1978	7,400	-	7,400	-
1979	7,900	-	7,900	-

Source: Estimated by the Mission

11. For grades 7-9 the teacher requirements and supply situation are indicated in Table 6. In this situation, it is assumed, again, that no additions are made to present training colleges. In addition, it is also assumed, in accordance with the reform, that teacher requirements from 1977 will be supplied wholly from the new ESEPs, as in the primary and pre-primary grades. This will mean a stop to the intake of university graduates, but, as will be seen below, the latter will be required for the ESEPs themselves.

TABLE 6

TEACHER REQUIREMENTS AND PROBABLE SUPPLY FOR GRADES 7-9, 1970-79

Year	Requirements	Supply		
		T.T.C.	ESEPs	University
1970	2,700	2,500	-	200
1971	2,400	2,000	-	400
1972	3,100	2,000	-	1,100
1973	3,500	2,000	-	1,500
1974	4,000	2,000	-	2,000
1975	4,000	2,000	-	2,000
1976	5,200	2,000	-	3,200
1977	7,300	-	7,300	-
1978	9,300	-	9,300	-
1979	9,600	-	9,600	-

Source: Estimated by the Mission

12. In grades 10-11/12 (i.e. ESEP level) the teacher requirements and supply situation are indicated in Table 7. In this situation it is assumed that the supply of teachers from the universities to grades 10-11/12 is simply the balance remaining after subtracting the supply to grades 7-9 and grades 1-6.

TABLE 7
TEACHER REQUIREMENTS AND PROBABLE SUPPLY FOR GRADES 10-11/12 (ESEPs)
1970-79

Year	Requirements	Supply (University)	Deficiency or Excess
1970	530	3,840	+ 3,310
1971	580	3,640	+ 3,060
1972	760	2,940	+ 2,180
1973	1,430	2,540	+ 1,110
1974	1,970	2,040	+ 70
1975	1,910	2,040	+ 130
1976	7,040	840	- 6,200
1977	2,690	4,540	+ 1,850
1978	4,810	4,540	- 270
1979	5,200	4,540	- 660

Source: Estimated by the Mission

13. Table 7 reveals a difficulty in implementing the reform not foreseen in the Educational Development Plan: the problem of the "bulge" in 1976, when grade 12 is incorporated into the new 10-12 system. Up to that date the present oversupply of university-trained teachers - that is, "oversupplied" in relation to the secondary (grades 7-11) system - is gradually reduced as requirements at the 10-11 level expand. Then in 1976 a massive requirement for teachers suddenly emerges, to be replaced a year later, when university-trained teachers are not required for grades 7-9, by a situation of substantial surplus. If facilities for the steady supply of university-trained teachers suddenly are increased in 1976 to meet the requirements generated by the reform, then one year later the new facilities would be redundant.

14. A partial way out of the difficulty described above would be to rephrase the output of ESEP-trained teachers so that in 1977 projected output of the latter is reduced (by 1,850) and the "surplus" university-trained teachers of 1977 (Table 7) go into grades 7-9. This overcomes the problem of a 1977 surplus, but still leaves the problem of finding 6,200 extra teachers for ESEPs in 1976.

15. Clearly, if the reform were to be implemented under the original time schedule, then careful planning and phasing of gross quantitative aspects of the whole teacher requirements/supply situation would be necessary. An additional complication is the specialized requirements for teachers, particularly for the ESEPs. Under the reform approximately half the teachers for the ESEPs will have to be specially qualified to teach in one or more of five technical fields: commercial studies, teacher training, industry, basic services and agriculture. If all these teachers are to be recruited from university, there are implications for university teacher training, and if a certain proportion are to be recruited from the general labour market, there are implications in terms of orientation courses and also, probably, for policy on salaries.

Conclusion

16. Implementation of the reform under the original time schedule is complicated by the teacher requirements/supply situation, but in any case is precluded by financial constraints alone. The latter now are being given close study by the Peruvian authorities, and this Report supports the Government's inclination to phase the reform. The immediate planning task is to integrate the financial aspects of the reform with financial projections for other sectors outside education. The teacher requirements/supply situation requires study in depth, not merely the question of numbers but also that of qualifications. Methods of training also need to be studied and, where appropriate, new methods experimented.

17. Injection of some modern educational technology into the Peruvian system probably is desirable, but in view of the great weight of the financial constraint on early implementation of the reform, and the present world-wide deficiency of cost-effectiveness analyses of educational aids and media, policy should be selective and devices adopted only where clear savings in costs can be achieved. While a revised, rephased, financially feasible Educational Development Plan is evolved, a start can be made on providing, with external assistance, some of the institutions which will be required by an improved educational system developing in the general direction of the reform.

IMPLICATIONS OF THE REFORM ON THE PROVISION OF WORK PRACTICE FACILITIES
FOR THE "BASICA REGULAR" EDUCATION LEVEL, GRADES 7-9

I. Individual Tool Kits

Estimated cost of individual tool kits 1,200 Soles
Projected enrolment 1980 (public schools):
964,000

Total estimated cost of individual tool kits: 1,156 million Soles

II. Work Practice Facilities

Based on projected 1980 enrolment of 964,000 and 25 pupils per practical room with seven periods a week devoted to practical work, it is estimated that approximately 6,000 special workshops will be required. If a building cost of 2,000 Soles per square metre is assumed, the capital investment required for these buildings will be in the region of

1,500 million Soles

CHAPTER IV

THE PROJECT

1. The project is designed as a contribution to the first phase of the reform. It is based on the creation of facilities for the new structures of the reform, namely ESEPs, CECAPes and basic education grades 7-9, together with needed support services such as instructional materials production and teaching improvement.
2. The project is presented within a geographical framework of nine educational administrative units (8 units plus Metropolitan Lima) and has been so designed that the elements in both quantitative and qualitative terms conform with the local needs of these geographic unities.
3. The process of decentralization of the operational control of education is another facet of this geographical presentation. Regional directors and zonal chiefs will under the proposed format be immediately exposed to the operational demands of the reform and so have the chance to gain gradual experience of the required programming techniques before the second phase of generalization of the reform.
4. The enrolments and the specialized areas proposed in the project presentation (see Table 1) correspond to the Government's overall intention of balancing development within the country by gradually eliminating the preferences which have previously been given to certain geographical areas.
5. Education areas 1 and 8 correspond to the northern geo-economic region of the country, educational areas 2, 3 and Metropolitan Lima cover the central geo-economic region, educational areas 4, 5 and 7 cover the south while educational area 6 coincides with the eastern part of Peru.
6. A description of some of the characteristics of these geo-economic regions particularly applied to specialized manpower needs is included under the description of appropriate elements of the project.
7. The enrolment planned under the project should cover 7 per cent of the projected total public enrolments in 1978 at grades 7-9 of the basic education cycle and 9 per cent of the projected public enrolments at grades 10-12 (ESEP level). However, if it is assumed that by 1978

under the conditions of the first phase of the reform, only 25 per cent of public enrolments will be under the framework of the reformed system, then the enrolments of the project institutions at grades 7-9 will in fact be 25 per cent of the sub-total, while for grades 10-12 ESEPs, the project will cover 37 per cent of the students under the reformed system in 1978.

Organization Aspects of the Project

8. It is suggested that within each educational area a certain degree of grouping of the facilities could be beneficial. For example, a Teaching Improvement Centre would necessarily be conjoined with an ESEP but at the same time, the positioning of a Basic Education Centre grades 7-9 in close proximity to the ESEP and the Teaching Improvement Centre would produce an interlocking educational grouping.

9. The Basic Education Centre could, therefore, act as a demonstration and practice school for teachers under training in the ESEPs, while its workshops could be put to a similar use by teachers undergoing retraining in the Teaching Improvement Centre. The workshop facilities of the ESEP could also be used by teachers undergoing retraining in the Teaching Improvement Centre as practical instructors for the ESEP level.

10. Regarding the ESEP level, it is recommended that no ESEP should be established with less than two specialities and if possible the maximum number practicable should be conjoined into one institution. This polyvalent approach has both economic and practical benefits, for example the grouping of agriculture and commerce in a rural area could lead to bridging between courses because the cooperative structure of agrarian reform will present a demand for technicians with a deep knowledge of the commercial aspects of agriculture, including accounting, marketing, etc. Similarly, the grouping of teacher training with industrial arts and subsequent bridging of courses will be necessary if a supply of properly trained handicraft teachers are to be forthcoming for future grades 7-9 of basic education.

11. Interconnections between the ESEP and CECAPes training should also be developed as certain facilities of the ESEP, particularly workshops, could be used for skilled worker training.

12. In the area of equipment, it is advised that provision should be made for the supply of individual tool kits to the pupils of basic education grades 7-9. These kits of simple tools should be sufficiently comprehensive to allow the pupil to practise the full range of a manual skill such as metalwork, woodwork, leatherwork or farm activities. The exact choice of activity to be followed and thus the actual make-up of the kit will vary according to the locality of the school.

13. In considering a generalization of the educational reform, allowance should be made for the cost of such kits and also for the meeting of the recurrent costs generated by the practical work. Teacher salaries already make up a considerable proportion of these recurrent costs, yet equipment will need maintaining and more essentially a continued supply of raw materials such as wood, metal, etc. will need to be forthcoming if work activities are to be effective.

14. Possible means of reducing the recurrent cost component include the integration of a component of production work in schools. Schools could make simple products for the community, thus obtaining a cash supply for the purchase of more raw materials. At the ESEP level it may, in addition, prove possible to make some of the simple tools required at the basic education level, thus reducing the capital cost component.

15. In the long run, it may be beneficial to examine possible methods of substituting to a certain degree educational capital inputs for educational personnel (teachers). A possible area for introduction of this concept is at the ESEPs where programmed learning and training techniques could be used for suitable portions of the courses. Similarly, the use of media and television as a means of providing education may be considered. Education in its broadest sense extends beyond systematic institutionalized activities and has to be available for all individuals and it is in this broad sense of education that the efficient use of communication media is essential.

16. A considerable proportion of effort through television and particularly radio will need to be directed at educationally under-privileged groups, but it must also be borne in mind that such groups are usually situated at the lower strata of economic society and thus steps need to be taken to ensure that receivers, radio and television, are made available to such groups.

TABLE 1

PROJECT SUMMARY

PROJECTED CAPACITY AND GEOGRAPHICAL DISTRIBUTION

Education Regions	Student ^{1/} Places in Basic Ed. (7-9)	Student-Places in ESEPs by Branches (10-12) ^{2/}							CECAPEs		Learning Mats. Prod. Centre	Teaching Improvement Centre ^{3/}
		Teacher Trg.	Indust. Trg.	Commerce	Basic Services	Agric.	Total	%	Addit. Equip. to ESEPs	Pupil-Places in Ag. CECAPEs		
1st Ed. Reg.	6,400	2,000	1,000	800	600	480	4,880	16	2 mob.un.	-	-	1
2nd Ed. Reg.	3,900	1,200	400	400	600	-	2,600	8	2 mob.un.	-	-	1
3rd Ed. Reg.	4,500	1,600	400	600	400	-	3,000	10	2 mob.un.	60	-	1
4th Ed. Reg.	3,300	600	800	400	400	-	2,200	6	2 mob.un.	-	-	1
5th Ed. Reg.	3,600	1,000	400	400	600	-	2,400	8	2 mob.un.	60	-	1
6th Ed. Reg.	3,600	600	400	400	400	600	2,400	8	2 mob.un.	-	-	1
7th Ed. Reg.	3,600	800	400	400	400	360	2,360	8	2 mob.un.	-	-	1
8th Ed. Reg.	6,400	2,000	800	800	1,200	-	4,800	16	2 mob.un.	60	-	1
Metropol. Lima	10,000	1,000	2,200	1,600	1,500	-	6,300	20	-	-	1	1
TOTAL	45,300	10,800	6,800	5,800	6,100	1,440	30,940		16 mob.un.	180	1	9
Percentages		35.0	22.0	18.0	20.0	5.0						

^{1/} Capacity is expressed in student-places. Actual enrolments could be higher dependent on the use of a shift system.

^{2/} See also Map (Chart No. 1).

^{3/} 300 throughput per year per centre.

17. Communication media can also, however, be used to supplement and complement educational activities within the institutional framework. This support can be aimed directly at the teacher and a class, in which case educational radio or television acts as a type of audio-visual aid to the educational process, or as a substitute for a teacher when qualified teachers are not available. Retraining or complementary courses for teachers are another possible area of action.

18. It is, therefore, suggested that an expansion in the use of communications media will be of benefit, both to the improvement of education within the formal system and as a means of achieving a principal goal of the educational reform, namely the equalization of educational opportunities based on the provision of resources for continuing self-education of the individual.

Costing of the Project

19. The capacities of the elements of the project and the proposed distribution of these elements are summarized in Table 1, while Table 2 gives a gross summary of the estimated costs of these elements.

20. The elements are further described in detail and costed on an individual basis in the continuation of this chapter.

TABLE 2

ESTIMATED COSTS IN US \$

<u>Elements</u>	<u>US \$</u>
1. Basic Education	24,180,900
2. ESEPs	39,017,300
3. CECAPES	772,900
4. Teaching Improvement	709,000
5. Instructional Materials Production Centre	<u>900,000</u>
TOTAL	<u><u>65,580,100</u></u>

Project Element No 1 - Basic Education

Nature of the Element

21. The basic education element included in the nine educational regions aims at the provision of 45,300 pupil-places equipped for grades 7-9 distributed over the nine regions according to their relative importance (see Table 1).

Justification

22. Grades 7-9 of basic education which constitute the third cycle of this level, correspond to a key point of the reformed school system and involve major changes in comparison to the traditional system. Even if not compulsory at the beginning, intentions are to increase gradually the enrolment rate of the corresponding age group and reach by 1980 approximately the 85 per cent mark. In addition to the new emphasis on a work-oriented education, this cycle is supposed to provide a level of academic achievement equivalent to the former grades 7-11. Administratively and institutionally, according to the scheme of "núcleos educativos", these grades will mainly be housed in "centros directores" or central types of schools to which a certain number of other schools principally offering grades 1-6 will be annexed. These "centros directores" will be the only ones in the "núcleo" to be provided with special types of facilities such as general science laboratories, workshops for practical activities, equipment for physical education, libraries, etc. to be used also by the remaining schools of the "núcleo". These "centros directores" will also be the ones in which the evening basic education courses for pupils over 15 years of age will be offered based on the needs of the area. The nature of the upper cycle of basic education, as well as its relative importance within the framework of the educational reform, leads to the conclusion that any significant contribution to the Peruvian educational reform should necessarily include a substantial number of these educational centres.

23. The number of places suggested for each educational region is related to the number of places included in the project for the ESEP level. It will be up to the Ministry of Education to decide the breakdown of places into individual institutions as well as to define the exact location of the resulting "centros directores" within each region, along the lines of the agreed principle that in the same town reformed centres of other levels will simultaneously be created.

Special Features of the Centres

24. The centres will be controlled directly by the Regional Directors. They will be coeducational. Their size will depend upon local conditions, varying probably between 500 and 1,000 pupils. Though the curriculum of this cycle is not yet ready, there are indications that the weekly load will be about 35 periods of 50 minutes each, out of which 2 periods will be on general sciences and 7 on practical activities. Due to the use to be made of their special facilities by the annexed schools, it may be estimated that they will operate on one and a half daily shift and one evening shift. According to the philosophy of the reform, the practical activities at this level will not be of vocational but of general education nature. No special facilities for evening vocational training (CECAPs) have been included since this training may be better offered and at a lower capital cost in the ESEPs in evening sessions.

Capital Cost

25.	<u>Soles</u> <u>Millions</u>	<u>US \$</u> <u>Thousands</u>
<u>Teaching and Communal</u>		
Buildings	630.3	16,286.8
Furniture	49.8	1,287.6
Equipment	<u>170.6</u>	<u>4,409.3</u>
Total including 10 per cent contingencies	<u>935.7</u>	<u>24,180.9</u>
Per pupil-place cost:	Soles 20,655	
	US \$ 534	

The preceding cost includes also site development and consultants' fees.

Teacher Requirements

26. On the basis of the present pupil-teacher ratio of 24 at the equivalent level, the total number of grades 7-9 teachers required for the project schools operating at full capacity will be at least 1,887, out of which 378 will be required for practical activities, half of them for industrial arts and half of them for commerce and home economics.

Basic Education Main Centres Cost

27.

	<u>Soles</u> <u>Millions</u>	<u>US \$</u> <u>Thousands</u>
<u>I. Teaching and Communal</u>		
1) <u>Building Cost</u> 45,300 pupils x 5m ² x Soles 2,200	498.3	12,876.0
ii) Site Development = 15% of (i)	74.7	1,930.2
iii) Consultants' fees = 10% of (i) and (ii)	57.3	1,480.6
iv) Furniture cost = 10% of (i)	<u>49.8</u>	<u>1,287.6</u>
Sub-total I	<u>680.1</u>	<u>17,574.4</u>
<u>II. Equipment Cost (on the basis of 28 periods occupancy out of 35)</u>		
<u>General Science Laboratory (2 weekly periods)</u> $\frac{45,300 \times 2}{40 \times 28}$ x Soles 194,000	16.5	426.4
<u>Industrial Arts Workshops (7 weekly periods)</u> $\frac{22,650 \times 7}{40 \times 28}$ x Soles 580,000	82.0	2,118.9
<u>Home Economics and Commerce (7 weekly periods)</u> $\frac{22,650 \times 7}{40 \times 28}$ x Soles 387,000	54.6	1,410.8
<u>General Equipment</u> 45,300 x Soles 387	<u>17.5</u>	<u>452.2</u>
Sub-total II	<u>170.6</u>	<u>4,408.3</u>
III. Grand Total I + II + 10% Contingencies	<u>935.7</u>	<u>24,180.9</u>
IV. Basic Education per pupil-place cost = Soles 20,655 US \$ 534		

Project Element No 2 - ESEPs

Nature of the Element

28. This element of the project aims at the construction and equipment of 30,940 pupil-places for the first cycle (grades 10-12) of higher education distributed over the 9 educational regions of the country. The areas for which facilities are provided are: 10,800 places for teacher training; 6,800 for industrial training; 5,800 for commercial education; 6,100 for basic services training; 1,440 for agricultural training.

Justification

29. The prolongation and principally the total conversion of the former upper secondary cycle (10-11) into a cycle for technician training is one of the most innovative features of the Peruvian educational reform. It implies the upgrading of this cycle into a higher education status and is based on a terminal qualification allowing entrance to the occupational market at technician level or its equivalent, and simultaneously admittance to any university field of study. Consequently, this leads to a total new conception of the content of the education to be given, as neither the traditional conception of technician training nor the traditional criteria for occupational acceptance or university entrance are valid under the terms of the reform. In terms of facilities this reform of the former upper secondary cycle also leads to a totally different type of institution from the traditional secondary schools.

30. The number of places included in the project for this cycle of higher education will form a firm base for development and evaluation of this vital cycle of education in the reform process.

Features of the Institutions

31. The ESEPs will be controlled by the Regional Directors and will be coeducational. Each institute will offer a variety of areas for technician training which have been grouped under the five main headings indicated in the introductory paragraph to this section; the diversity of specializations included in any one institute will be decided on the basis of local characteristics and needs. In some cases an additional year for certain specialties may probably have to be added to the normal three year course. The curricula for this cycle have not yet been accurately determined but there are indications that the weekly load will

be about 40 periods of 50 minutes, out of which about 25-30 per cent will be devoted to general common subjects and the rest to subjects particularly related to each main area of specialization. A relatively high percentage of time will thus have to be devoted to practical activities including laboratories, workshops, farm practice and supervised work outside the institute.

Teacher Training

32. The teachers trained in the ESEPs will be for pre-primary education and for basic education (grades 1-9). Teachers for grades 1-6 will probably be trained in a three year course and the remainder in a four year course.

33. Assuming that one third of the teacher training section in the project ESEPs will be for grades 1-6 and two thirds for grades 7-9, the project schools will approximately cover by 1978 about 12 per cent of the requirements for grades 1-6 and 22 per cent for grades 7-9, if all graduates enter the teaching profession.

34. Different combinations may be applied in combining the three and four year courses: either to give the same training to everybody in the first three years (10-12) qualifying for teaching in grades 1-6, and afterwards (grades 13-14) the specialization for pre-primary and the various teaching areas of grades 7-9, or to diversify the training from the beginning. The first approach has been used here for calculation purposes.

35. No boarding facilities are included in these institutions. No annexed basic education centres have been assigned to these institutions since the basic education centres of the project will be available to them for practice purposes.

36. The specialities to be offered will cover the following areas: pre-primary education, basic education grades 1-6, and grades 7-9 in mathematics, basic sciences, social sciences, Spanish, practical activities, fine arts, and physical education.

Industrial Technicians

37. The purpose of the element is the training of technicians according to the following performance specifications:

His competence in a broad field of occupational activities should be such as to render him employable immediately upon his graduation, and to do so that the employment is beneficial for both the individual and the society as a whole;

His technical and other theoretical knowledge should enable him to make socially beneficial use from work experience, and render him retrainable for the remainder of his working life;

His comprehension of social phenomena and his social attitudes should enable him to live up to the responsibilities assigned to him by the emerging new society;

His capability of adjusting to changing conditions should render him mobile with regard to social status, geography and occupational specialization.

ESEPs should, in order to achieve their educational objectives, have a pluri-professional basis for their training, and a course complete in itself. They should not in any way be shaped according to requirements originating from traditional concepts of university programmes and teaching.

38. Technicians thus trained would furnish for the country urgently needed technical specialists who could simultaneously take a leading role in materializing the concept of a new society based on democratic principles. Graduates would also, after appropriate work experience, become practical subject teachers in institutions for basic education and, with work experience and supplementary training, in ESEPs.

39. For the provision of industrial ESEP training facilities, consideration needs to be given to overall zonal development strategies as envisaged in the National Development Plan. Accordingly, the following areas are suggested for industrial training branches within ESEPs:

a) In the north, i.e. in Zones 1 and 8, Piura should have a high priority, the Plan considering this area one of "comparative advantages" and emphasizing the development of agriculture, industry, electricity supply, fishing and building construction. The area has an infrastructure which is adequate for the exploitation of its resources, and is also an important commercial centre. Another area could be Trujillo, where the Plan foresees an expansion and multiplication of manufacturing industries.

b) In the centre of the country, i.e. in Zones 2, 3 and Lima, needs exist for ESEP graduates in order to support the mining industry, fishery and fish processing plants, and for other industry in this area of relatively high development level.

c) In the south, i.e. in Zones 4, 5 and 7, specialized personnel is needed for the implementation of development plans which foresee the reinforcement of agriculture, electricity supply, transport, fishing and building construction. Arequipa may be singled out in this region of relatively high development, and Cuzco as a point of population saturation with scarce natural resources, and hence a site for industrial development and creation of industrial employment.

Commercial Element

40. The development of ESEP training facilities in these specialties is in response to an urgent need which developed as a consequence of past maladjustments to the country's needs. Then commercial training was done in commercial schools which trained for a low level of commercial activities, and often with insufficient quality, or, at the professional level, at universities, where training was often abstract and remote from the conditions prevailing in the country.

41. As lack of socio-economic development can, inter alia, be attributed to shortcomings in commercial activities, in particular with regard to the marketing of agricultural products, but also with regard to the distribution system for non-agricultural goods and services, it is now realized that a new type of commercial training at the technician level is needed which is in the position to apply in cooperatives and in other industrial and commercial enterprises, in insurance companies and banks modern principles of commerce and administration, and to utilize in this context the modern technological means.

42. In view of the importance of marketing for agricultural development, commercial branches should be foreseen in all ESEPs catering in the main for agricultural training. But as modern management is also an essential for the economic functioning of industrial and service enterprises, it is felt that commercial training should be one of the branches in almost every ESEP, including those for teacher training, as here future teachers for commercial work-oriented activities may be trained.

43. In view of these considerations, it would seem difficult to single out any specific location for commercial training in ESEPs. However, mention may be made of Chiclayo in the north, Huancayo in the centre, Arequipa in the south and Iquitos in the east.

Basic Services Element

44. Although there has in the past been an over-supply of university graduates in some specializations, this has not, unfortunately, led to an over-provision to the population of social and medical services, which in turn had the consequence of imbalances in the social development of different social strata of the population. Increased university training will in the long run contribute to an amelioration but it is felt that these measures can be fully effective only if the professionals can have the collaboration of personnel at the technician level, and it is, therefore, considered that the new scheme for training such personnel in the "basic services branches" of ESEPs is of paramount importance in the context of overall social development.

45. Training in basic services being a new scheme, many details remain to be worked out, but Government plans foresee that training should be provided primarily in paramedical occupations and in social work. In addition, tourism and catering training will be offered in order to prepare competent personnel for the development of tourism for which there is considered to be a great potential in Peru. Also, training would be provided in what may be called institutional management; this term is used to denote the domestic science aspect of larger units such as boarding houses, hospitals, etc.

46. Just as commercial training will be provided in many, if not most ESEPs, so should training in basic services. Preference for this training should be given in the most important population centres (although this will, of course, further enhance the attraction of the big towns), and in view of the potential for tourism development, to Iquitos in the north.

Agricultural Technicians

47. Due to the special characteristics of this area of training, the number of places provided have been chosen on the basis of clearly located needs. Four hundred and eighty places will be in Piura (1st educational region), 240 in Tarapoto and 360 in Pucallpa (both 6th region) and 360 in Puno (7th region).

48. A review of the needs of agricultural professionals and technicians up to 1980 indicates that, while there will be a surplus of agricultural professionals and veterinarians, at technician level there will be a clear shortage in all the broad agricultural sectors. This is principally due on the one hand to the needs created by the Agrarian Reform and the future development of the Peruvian agriculture and, on the other, to the limited output of the existing eight post-secondary institutions (considering that the secondary vocational schools will be discontinued as from 1976, following the educational reform). It is clear that both the projected needs and the outputs give a rough indication, which will have to be adjusted after two or three years. Two of the eight existing "Escuelas de perito agrícola" will be merged (Chincha with Cañete) leaving a total of seven, concentrated in the central-southern region of the country, except for the Tacna school. The northern coastal region, which is the object of many agro-industrial and irrigation projects, the Selva region, important for forestry and the Andean southern region, very important for "auquenids", cattle and sheep raising, are all at present lacking training institutions.

Cost of the ESEP Element

49

	<u>Soles</u> <u>Million</u>	<u>US \$</u> <u>Thousands</u>
a) <u>Teaching and Communal</u>		
Building	861.1	22,250.6
Furniture	68.1	1,759.7
Equipment:		
Teacher training	104.8	2,708.1
Industrial training	183.6	4,744.2
Commerce	36.0	930.2
Basic services	51.9	1,341.1
Agricultural training	<u>37.4</u>	<u>966.4</u>
Sub-total	<u>1,342.9</u>	<u>34,700.3</u>
b) <u>Boarding (for agricultural sections)</u>		
Building	19.6	506.4
Furniture	1.9	49.1
Equipment	<u>1.9</u>	<u>49.1</u>
Sub-total	<u>23.1</u>	<u>595.1</u>

	<u>Soles Million</u>	<u>US \$ Thousands</u>
c) <u>Staff Housing</u> (for agricultural sections)	<u>6.4</u>	<u>165.4</u>
Grand Total including 10% contingencies	<u>1,509.6</u>	<u>39,006.9</u>

The above cost includes also site development and consultants' fees.

Per place cost:		Soles	US \$
Teacher training		43,704	1,129
Industrial training		62,720	1,620
Commerce		39,862	1,030
Basic services		42,393	1,095
Agricultural training		84,305	2,178

50. The following table gives the percentages of the agricultural active population for the three regions where the places for agricultural technician training are proposed.

TABLE 3

ESTIMATED AGRICULTURAL ACTIVE POPULATION FOR SELECTED DEPARTMENTS (1970)

Department	Total Population	Agricultural Active Population		Agricultural Active Population to Total Active Population
	'000s	'000s	%	%
Tumbes	26.6	7.7	29.0	0.4
Piura	262.9	132.9	50.6	7.0
Lambayeque	132.1	55.3	41.9	2.9
Cajamarca	120.9	90.2	74.6	4.7
TOTAL	542.5	286.1	52.7	15.0

TABLE 3 (cont'd)

Department	Total Population	Agricultural Active Population		Agricultural Active Population to Total Active Population
San Martín	57.4	41.4	72.1	2.2
Amazonas	49.8	35.9	72.1	1.9
Loreto	125.0	68.0	54.4	3.6
Huánuco (Pachitea)	n.a.	n.a.	n.a.	n.a.
TOTAL	232.2	145.3	62.6	7.7
Puno	306.8	204.5	66.7	10.7
Cuzco	277.8	156.7	56.4	8.2
Apurímac	107.7	77.4	71.9	4.1
TOTAL	692.3	438.6	63.4	23.0
GRAND TOTAL	1,467.0	870.0	59.3	43.7

Teacher Requirements for ESEPs

51. On the basis of 22 pupils per teacher - almost the present situation - the total number of teachers required for this total element in full operation will be 1,400 based on 700 for general subjects, 245 specially related to teacher training, 154 for industrial subjects, 125 for commerce, 141 for basic services and 35 for agriculture.

ESEPs Capital Cost

52.

Soles US \$
Million Thousands

I. Teaching and Communal

A. Building Cost

1) Building area = 30,940 pupils x 10m ² x Soles 2,200	680.7	17,589.1
ii) Site development = 15% of (i)	102.1	2,638.2
iii) Consultants' fees = 10% of (i) and (ii)	78.3	2,023.3
iv) Furniture cost = 10% of (i)	<u>68.1</u>	<u>1,759.7</u>
Sub-total A	<u>929.2</u>	<u>24,010.3</u>

	<u>Soles</u> <u>Million</u>	<u>US \$</u> <u>Thousands</u>
B. <u>Equipment Cost by Branches</u>		
1) Teacher training = 10,800 x Soles 9,700	104.8	2,708.1
ii) Industrial technician = 6,800 x Soles 27,000	183.6	4,744.2
iii) Commerce = 5,800 x Soles 6,200	36.0	930.2
iv) Basic services = 6,100 x Soles 8,500	51.9	1,341.1
v) Agricultural technician = 1,440 x Soles 26,000	<u>37.4</u>	<u>966.4</u>
Sub-total B	<u>413.7</u>	<u>10,690.0</u>
TOTAL A + B	<u>1,342.9</u>	<u>34,700.3</u>
II. <u>Boarding (for Agricultural Schools)</u>		
1) Building area (dormitory, double bunkers) = 1,440 pupils x 4.6m ² x Soles 2,000	13.2	341.1
Dining/kitchen = 1,440 pupils x 0.8m ² x Soles 2,000	2.3	59.4
ii) Site development = 15% of (i)	2.0	51.2
iii) Consultants' fees = 10% of (i) and (ii)	1.8	45.2
iv) Furniture = 12% of (i)	1.9	49.1
v) Equipment = 1,440 pupils x Soles 1,300	<u>1.9</u>	<u>49.1</u>
TOTAL II	<u>23.1</u>	<u>595.1</u>
III. <u>Staff Housing (for Agricultural Schools)</u>		
TOTAL III	<u>6.4</u>	<u>165.4</u>
IV. <u>GRAND TOTAL I + II + III Including 10% Contingencies</u>		
	<u>1,509.6</u>	<u>39,006.9</u>
ESEP Per Pupil Cost	<u>Soles 48,800.0</u>	<u>US \$ 1,261.0</u>

Project Element No 3 - CECAPES

Nature of the Element

53. This element aims at the provision of facilities for vocational training for adults along the lines of the reform. For industrial, commercial and basic services training, it will imply only the addition of mobile units to the ESEPs to offer such training in areas outside the towns where they are located. For the urban population, the ESEPs facilities should be used in the evenings.

54. In relation to agricultural vocational training, the construction of three training centres is proposed, two of which will be located in the Andean region and one on the coast. The main objectives of these centres are:

a) training of about 1,200 to 1,300 farmers and rural wives per year and per centre;

b) concentration and organization, at regional level, and further diffusion at zonal level, of various extension activities in the fields of agriculture, animal husbandry, forestry, human and animal health, home economics, rural construction;

c) to facilitate activities in distant zones by the means of mobile units.

Justification

55. As indicated in the general description of the system, too many uncoordinated activities dealing with adult training and education are spread out over the country. These activities are mostly operated and organized from the capital, leaving little responsibility to the regional authorities.

56. As already mentioned in this Report, the reform necessitates overall planning of efforts aimed at training and educational up-grading of the population. This is particularly true of agricultural adult training, because dispersed and untidy programmes confuse and distress farmers.

57. A further reason for integrating activities from different sources is the fact that in the Andean regions villages are dispersed and very often communications are difficult or insufficient. The repetition of similar programmes results in a great wastage of both time and money.

58. An adult (and young peoples') training and education programme cannot be the same for the whole country: differences in social behaviour, customs, geographical situation, local economy, agricultural possibilities, need a particular and different programme content and methodology, which can be best studied and organized at least at regional level, with the final adaptation at zonal level for the decentralized courses.

59. All these integrated activities will be concentrated in three centres located in Sicuani (Cuzco) for the south, Huancayo (Junín) for the centre and Chicama (La Libertad) for the north.

60. The Sicuani centre will cover principally the Cuzco, Apurímac, Madre de Dios and Puno departments. As for the agricultural ESEPs, these departments play an important role as animal husbandry regions. In addition, the major crops are maize, potatoes, wheat and barley, tea, cocoa and various fruits.

61. The Huancayo centre will principally be supported by the agricultural school (future ESEP) situated in the same town. It will cover the Junín, Huánuco, Huancavelica and Ayacucho departments, whose agricultural economy is based principally on animal husbandry and potatoes, maize, barley, wheat, coffee and cocoa cultivation.

62. In the north, the Chicama centre will cover La Libertad and Ancash departments and the provinces of Cajamarca, Celendín, Contumazá, Hualgayoc, S. Miguel and Cajabamba. The principal crops produced are rice, barley, maize, wheat and sugar cane, while the main animals bred are pigs.

63. All three centres should be placed under the direct responsibility of the regional technical bodies; these centres will develop their training and advisory activity through a very limited permanent staff in collaboration with the existing staffs of various services such as agricultural extension, veterinary, health, educational institutions. Each centre will consist of some simple buildings for the permanent staff, two classroom-workshops for 30 persons each, boarding facilities for 60, a mechanics workshop, an artisanal workshop for woodwork and similar activities, some farm buildings for animal breeding (cattle, pigs, sheep, chicken),

a dairy unit, some sheds for agricultural machines, tools and agricultural products (harvested products, implements, fertilizers) which will allow not only the storage and/or distribution of products for/to the farmers but also demonstration courses. The agricultural equipment must be complete because of the various teaching and demonstration activities the centre will be called on to carry out.

64. Training activities will be based, at the beginning, on various crop cultivation techniques, animal husbandry and health, farm mechanics, home economics, hygiene and health and artisanal work. The courses will be of short duration (maximum 15 days) and each trainee will take several courses (not necessarily all in the same year) following a gradual up-grading of his practical knowledge. Considering two courses per month, each for a total of 60 persons (divided into two different groups), it will be possible to train about 1,200-1,300 persons per centre per year.

65. The great distances and difficulty of communications between many valleys and villages call for the mobility of training possibilities. This is why each centre should be equipped with three mobile units, which could be used by the different extensionists and technicians in the field following a well-planned programme. These mobile units should be equipped with audio-visual aids and tools to allow not only for demonstrations but for the active participation of adults. These decentralized courses will have to use the facilities of the different Núcleos Escolares Campesinos (NEC), Centros de Educación para el Desarrollo de la Comunidad (CEDEC), general education schools, and ESEPs, thus ensuring the participation of all educational sectors in a total programme.

Estimated Cost of the Element

66. The investment costs needed for each agricultural centre are as follows:

	<u>Soles</u>	<u>US \$</u>
a) <u>Teaching and Communal</u>		
Buildings	1,623,800	
Furniture	134,000	
Equipment	<u>297,000</u>	
TOTAL	<u>2,054,800</u>	<u>53,100</u>

	<u>Soles</u>	<u>US \$</u>
b) <u>Boarding</u>		
Buildings	1,012,000	
Furniture	84,000	
Equipment	<u>13,000</u>	
TOTAL	<u>1,109,000</u>	<u>28,600</u>
c) <u>Farm Facilities</u>		
Buildings	2,118,000	
Equipment	<u>3,810,000</u>	
TOTAL	<u>5,928,000</u>	<u>153,200</u>
d) <u>Staff Housing</u>		
Buildings	<u>879,000</u>	<u>22,700</u>
TOTAL per Centre	<u>9,970,800</u>	<u>257,600</u>
TOTAL for the Three Centres	<u>29,912,400</u>	<u>772,900</u>

Consultants' fees, site works and contingencies are included in the above figures.

Project Element No 4 - Teaching Improvement Centres

67. One of the most urgent needs for the implementation of the reform is for an adequate supply of teachers for practical subjects. Such teachers are required for grades 7-9 of the basic education cycle and also at the higher level as teacher/instructors for the ESEP system.

68. It is considered that the most appropriate source of practical subject teachers for grades 7-9 would be from the existing teaching force at primary and secondary levels. Interested teachers from this source would be retrained on an in-service basis for this new function.

69. For the time being, the source of supply for the practical components of ESEP studies would be drawn from the higher levels of existing technical secondary school teachers together with existing staff of intermediate level institutions but these two sources could only supply a

limited proportion of the requirements. A further source to meet short-term demands must also be tapped and it is suggested that a number of persons with the requisite skills could be taken from industry and agriculture. Such persons would then need a short intensive course in teaching methodology before taking up teaching posts in the ESEPs.

70. There already exists in Peru a national system for teacher improvement which comes under the control of the National Institute of Educational Research and Teacher Improvement. This scheme is currently retraining by grades (1st grade in 1972, 2nd grade in 1973) to meet the needs of conversion to the reformed educational system. To date, however, this scheme has not dealt with the training of practical type teachers, although a Unicef/Unesco assisted programme is being established to cope with the question of the improvement of science teaching. It is, therefore, suggested that this National Institute of Educational Research should expand its activities towards the training of practical type teachers and take administrative responsibilities for operational matters of this project element.

71. As the new educational system develops, the need for such practical teachers will continue albeit on a smaller quantitative scale. It is, thus, foreseen that the proposed Teaching Improvement Centres will have also a long-term function. Once ESEPs are established and a student flow is in operation, a certain number of the output of the ESEPs, especially for the industrial, agricultural and commercial tracks, will require training as teacher/instructors for the ESEP system.

72. It is suggested, therefore, that the Teaching Improvement Centres will, in the long-term, take over, in addition to continuing in-service training, a certain amount of teacher production. A possible basis for such production would be a short four month course in teaching methodology followed by supervised teaching experience over an eighteen month period. This supervised teaching period would include a prescribed quantity of further in-service training and at the satisfactory completion of the total two year period, the candidate will be considered as being a fully qualified teacher.

73. The Teaching Improvement Centres would be located on a regional basis and situated in close proximity to an ESEP, a grade 7-9 Educational Centre and possibly also associated with Science Teaching Improvement. The facilities of these two former institutions would be available to the Teaching Improvement Centre for teaching practice and also to a certain extent for workshop practice for the handicraft teachers.

Provision should be made for facilities to cover two groups of thirty teachers at any given time. If five courses are provided per year, this will give a throughput of three hundred teachers per Centre per year and a national total throughput of 2,700.

Cost of Teaching Improvement Centres

	<u>Soles</u>
<u>Instructional Facilities (60 students per course) (400 sq.m.)</u>	
Buildings, including site works	900,000
Furniture	70,000
Equipment	<u>650,000</u>
TOTAL	<u>1,620,000</u>
Equipment includes 1 bus for transportation of teachers to the Centre.	
<u>Boarding Facilities (40 students)</u>	
Buildings, including site works	1,200,000
Furniture	<u>140,000</u>
TOTAL	<u>1,340,000</u>
TOTAL per centre	<u>2,960,000</u>
TOTAL Project Element (nine centres)	<u>Soles 27,440,000</u>
	<u>US \$ 709,000</u>

Project Element No 5 - Instructional Materials Production Centre

Nature of the Element

75. This element includes the provision of buildings, equipment and technical assistance required for the preparation of a wide variety of instructional materials and programmes for students and instructors within both the formal and informal educational systems.

Aim of the Element

76. The implementation of the reform of education with its stress upon new structure, content and methodology will necessitate a substantial effort in curriculum development and the preparation and production of related instructional materials, ranging from textbooks and teachers' manuals to appropriate radio, ETV and ITV programmes. Although many of the new courses of study may be developed through the National Institute of Education Research and Teacher Improvement and the services of the National Institute of Tele-education utilized to coordinate the transmission of radio and television courses, there exists no special agency to prepare, produce and evaluate experimental printed materials and radio/TV programmes. Hence, the proposed Centre would constitute an important element within the institutional complex required to implement the reform.

Description of the Element

77. The proposed Centre, which could be placed under the control of the National Institute of Education Research and Teacher Improvement, would have functions for both the formal and informal systems, such as the following:

- a) prepare and print all forms of experimental instructional printed materials;
- b) design and produce experimental audio-visual aids such as slides, charts and maps;
- c) write and record audio programmes for radio and tape uses;
- d) prepare and produce prototype ETV and ITV programmes;
- e) provide a distribution service to ensure a maximum nationwide utilization of the materials produced at the Centre.

78. In connection with the above functions, the mass production of tested printed materials will be left to specialized printing firms. Therefore, the Centre will not require the heavy equipment involved in such reproduction processes, but should have adequate machinery for simple types of bulk production such as mimeograph and light off-set equipment.

79. Given the regional needs for differentiated materials, it is important that the Centre utilize the services of nationals possessing a detailed knowledge of local conditions. Therefore, the Centre will require facilities for small working groups brought in to perform short-term specific tasks.

80. Further, a certain amount of technical assistance will be required, particularly for the development of innovative instructional materials and for the planning of educational radio and television utilization.

Cost of the Element

81.	<u>Soles Million</u>	<u>US \$ Thousands</u>
Buildings	19.4	500
Equipment	<u>15.9</u>	<u>400</u>
TOTAL	<u>35.3</u>	<u>900</u>

Technical Assistance

82. The implementation of the educational reform will put considerable stress on existing qualified personnel in Peru and it would appear that a certain amount of technical assistance will be necessary if the proposed project is to operate in an effective manner. In addition is the consideration that the project will cover a considerable portion of the first phase of the reform and thus have an important role to play as a forerunner of the future educational development of generalization of the reform.

83. Technical assistance will probably be required in order to strengthen overall educational planning at the national level, particularly in the area of mechanisms for evaluation of the reform processes. Such evaluation should be built into the process of reform at an early stage as without effective evaluation it will be difficult to achieve a valid vector planning for the second phase of the reform. Some technical assistance possibly in the form of training courses will also be required for the nine Regional Directorates of Education who will in reality be carrying the responsibility for the field implementation of the reform.

84. Technical assistance in in-service and pre-service techniques of training teachers, particularly in practical subjects, will be a further requirement; also the introduction of new methodologies, such as programmed teaching for certain portions of the ESEP courses, will make demands that can only be met by external assistance.

85. One of the more specialized elements of the project, namely instructional materials production and educational radio and television, form areas where technical assistance will also be required, particularly in the early developmental stages.

Recurrent Expenditure Implications of Project

86. On the basis of the Educational Development Plan's projected unit costs (assuming constant salary rates, as in column (1) of Table 2, Chapter III above) the Project will generate the following recurrent expenditure in 1980:

	<u>Millions of 1970 Soles</u>
Basic Education	127
ESEPs	194
CECAPES	4
Teaching Improvement	8
Instructional Materials Production Centre	<u>1</u>
TOTAL	<u>334</u>

87. The figure of 334 million Soles is a 3.2 per cent increase over estimated 1971 recurrent expenditure of 10,456 million Soles.

Location of the proposed projects

