

In the education sector, facilities can mean many things, including shelters in which students can learn safely, quietly, and comfortably, and tools that teachers can use to transfer knowledge and technology to students. Facilities include buildings, furniture, water and electricity supply, laboratories, libraries and, in Lao PDR, other instruction materials. The facilities directly used for teaching and learning are reported in other sections. This section reports on primary and secondary school buildings.

## 5.1 Status

### School Buildings

There are currently about 7,900 primary schools with 26,000 classrooms for 820,000 students. At the secondary level, there are about 900 schools with 5,300 classrooms for 210,000 students. Only 19 percent of school buildings are in good condition, and about 30 percent of the villages have no primary schools. In the cities, classrooms are often crowded and frequently used for double shifts. Many schools have inadequate playground space, no fences and are too close to the streets or other areas of potential danger. These situations make schools noisy, unsafe and unhealthy. In the rural areas, there are many incomplete schools, often with no fences, trees, gardens, or wells. Some are located outside of the villages and too close to the forest and river. These may be threatened by forest fire and flood. School buildings in Lao PDR vary from structures made of bamboo to good buildings made of durable materials. School buildings can be classified roughly in three groups: temporary, semi-permanent and permanent.

More than 4,600 schools (58 percent) are temporary buildings generally made of wood or bamboo, with bamboo or grass sheet roofs. If the main frame is made of hard timber, its life span is estimated to be more than 10 years; although the roof and walls need to be replaced every two years. If the whole building is made of bamboo, its life span is less than three years. These school buildings are mostly incomplete schools, having one, two or three classrooms (small size) without doors, windows, ceiling, well, toilet, and in some cases without walls. Temporary building schools are very common in the remote and mountainous areas, particularly in minority ethnic villages where there are no access roads. The cost of this type of buildings is low (about US\$1,000) because the raw materials and labor are available at the village.

About 3,000 schools (36 percent) are semi-permanent buildings. The framework of these buildings is made with durable materials: concrete or hard wood. The floor is paved or unpaved, and the walls are made with bamboo panels. Fifty percent of semi-permanent buildings have no doors or windows, 90 percent have no water supply or toilets, and the roofs are mostly bamboo or galvanized iron sheets.

The bamboo elements need to be replaced within three years and the galvanized iron sheets within 10 years. The life span of this type of building is estimated at about 20 years. These buildings are commonly found in the lowland villages and towns where people have some income and where there are access roads. Complete primary schools and lower secondary schools are generally semi-permanent buildings. They tend to be very old and irregularly maintained. The cost of these buildings varies by province but is about US\$10,000-15,000 (furniture included), and the cost for annual maintenance is about 1 million-5 million kip.

There are about 500 permanent school buildings (6 percent). These buildings are made with durable materials, e.g. cement, steel or hard wood, and covered with galvanized iron sheets or fiber-cement. This type of building is usually found in the larger villages and cities accessible to roads. They have been built with funds of the government, foreign donors (e.g., Japan, USA, Germany, Australia), international organizations (e.g., World Bank, ADB, UNICEF, NGOs), and private sources. The cost of a permanent complete school is about US\$32,000-50,000 (furniture included).

#### New Construction and Maintenance

The construction of new schools occurs in three ways. First, MOE has a small budget for school construction. Each year, the PES receives district requests for new school construction, review those proposals and forward their recommendations to MOE. Once approved by MOE, the new schools are constructed. Secondly, communities can request permission from MOE to construct their own school. Finally, some schools are constructed as part of international assistance projects.

Maintenance of schools is the responsibility of local communities. Communities have village education committees that assess fees to community members and sponsor fund-raising events to cover these costs. The central and provincial education authorities play almost no role in school maintenance.

#### Furniture

In the remote and mountainous villages, where people have little or no income, they use local materials, such as bamboo, to make simple desks and benches. This type of furniture needs to be replaced every year. In the lowland areas, the communities typically supply desks and benches made of softwood, which need to be repaired within two or three years. For complete primary schools and secondary schools in small towns which are accessible by roads, the government and community each supply 50 percent of the furniture. For new buildings the cost of furniture is generally included in the construction cost. If such furniture is made of good wood, then the price is about 20,000-30,000 kip per set (one desk and bench for three students).

#### Electricity and Water Supply

Only the schools in the cities of Luangprabang, Vientiane Municipality, Thakek, Savannakhet, Pakse, Saravan and some towns in Vientiane province are supplied

with electricity and water. Neither electricity nor water is provided to schools in other areas.

### Transportation

In the cities, transportation is very expensive and traffic is a safety concern for the parents. At primary schools more than 50 percent of pupils use bicycles, and at secondary school 70 percent use bicycles, 25 percent use motorcycles, and 5 percent use a parent's car. The streets are very bad, too narrow and often under construction, especially in Vientiane Municipality. Because the working time tends to be the same for all people, traffic is very heavy at 8 a.m., 12 noon, and 4 p.m. At these times many accidents occur.

## 5.2 Analysis

### Primary Schools

MOE data indicate that the distribution of classrooms between provinces is unequal. In terms of classrooms per 1,000 population, the most and the least developed provinces and districts can be classified as shown in Tables 5.1 and 5.2. The distribution of schools per district is shown in Tables 5.3 and 5.4. There are 45 districts located in remote and mountainous areas having fewer than five classrooms per 1,000 habitants. For distribution of primary schools by district, also see Appendix 2.

The types of school buildings are associated with the wealth of the provinces, e.g., in Vientiane Municipality, 33 percent of total schools are permanent, as compared with the provinces of Sekong, Phongsaly, Saravan, and Attapeu which do not have any permanent school buildings. The size of classrooms also varies across the districts. In the urban areas classrooms are standardized at 48 sqm; in the lowland villages classroom size ranges from 30 to 40 sqm; and, in the upland villages from 20 to 30 sqm.

As shown in Table 5.5, 1,476 primary school buildings need annual maintenance; 1,257 primary schools (permanent and semi-permanent buildings) need periodic maintenance; 1,200 primary schools (permanent and semi-permanent buildings) need rehabilitation; and, 4,000 temporary buildings need to be replaced in the near future. Seven provinces (Sekong, Saravan, Bokeo, Phongsaly, Houaphan, Luangprabang and Attapeu) have more than 50 percent of schools in very poor condition.

The needs in the cities and rural villages are different. In the cities it is relatively easy to get aid from the government and donors, but the problem for the parents is the high cost of school fees and the shortage of instruction materials. In the rural areas, especially in remote villages, the problem is the availability of classrooms, textbooks and teachers. More than 4,000 scattered villages in the mountainous and minority ethnic areas do not have schools. These areas are disadvantaged economically and geographically.

Table 5.1  
Most Developed Provinces in Ratio of Primary School Classrooms to Population

	Provinces	Clr/1,000h*
1	Vientiane P	7.06
2	Xiang Khouang	6.82
3	Sayaboury	6.58

\* Number of classrooms per 1,000 habitants

Table 5.2  
Least Developed Provinces in Ratio of Primary School Classrooms to Population

	Provinces	Clr/1,000h*
1	Sekong	3.8
2	Saravan	4.00
3	Oudomxay	4.70

Number of classrooms per 1,000 habitants

Table 5.3  
Most Developed Districts in Ratio of Primary School Classrooms to Population

	Districts (Province)	Clr/1,000h*
1	Longsan (Saysomboune)	17.75
2	Phoon (Saysomboune)	11.36
3	Phoukut (Xiang Khouang)	8.67
4	Saysombouneoon (Saysomboune)	8.27
5	Pek (Xiang Khouang)	8.25

\* Number of classrooms per 1,000 habitants

Table 5.4  
Least Developed Districts in Ratio of Primary Schools Classrooms to Population

	Districts (Prov)	Clr/1,000h*
1	Ta Oy (Saravan)	0.96
2	Kalum (Sekong)	1.09
3	Atsaphangthong (Saravan)	2.03
4	Toomlan (Saravan)	2.51
5	Long (LuangNamtha)	2.53

\* Number of classrooms per 1000 habitants

Table 5.5  
Condition of Primary Schools (1998)

Types/condition	Good	Poor	Bad	Total	%
Permanent	220	136	90	446	6
Semi permanent	635	1,121	1,113	2,869	36
Temporary	621	1,611	2,355	4,587	58
Total	1,476	2,868	3,558	7,902	100
Percentage (%)	19	36	45	100	

Good: comfortable and safe, but requires annual maintenance,  
 Poor: usable but uncomfortable, requires periodic maintenance,  
 Bad: unsafe or tends to fall down; requires rehabilitation or replacement.

Table 5.6  
Condition of Secondary Schools (1998)

Types/condition	Good	Poor	Bad	Total	%
Permanent building	300	100	50	450	50
Semi permanent	170	50	40	260	30
Temporary	80	60	40	180	20
Total	550	210	130	890	100
Percentage (%)	61	24	15	100	

## Secondary Schools

In the whole country there are 730 lower secondary schools with 3,983 classrooms for 154,000 students, and 159 upper secondary schools with 1,314 classrooms for 58,000 students. One district is without a lower secondary school, and 30 districts are without upper secondary schools. For distribution of secondary schools by district, also see Appendix 2.

Secondary schools can be arranged by building type and by degree of building condition as shown in Table 5.6.

About 550 secondary schools need annual maintenance; 150 secondary schools (permanent and semi-permanent) need periodic maintenance; 90 secondary schools (permanent and semi-permanent) need rehabilitation; 100 temporary secondary schools need to be replaced; and, 31 new secondary schools (three classrooms) need to be provided.

## 5.3 Funding Arrangement

### National Budget

The Government has had limited resources for facilities development. With the assistance of loans and grants from donors, MOE has made efforts to increase the capital budget to respond to these needs. These expenditures include new

construction, rehabilitation of schools and offices, projects operation, and consultant services. MOE has contributed between 18 to 30 percent of the total cost of construction.

#### Donors

Since 1990, international donors (e.g. ADB, World Bank UNICEF, UNDP), governments (e.g. Switzerland, Sweden, Japan, Norway, France, and Germany), and NGOs have contributed funds to implement education in Lao PDR. Twenty-three percent of donor funds have been allocated to civil works and 10 percent to furniture and equipment. By level of education, 42 percent of overall donor funds have gone to the university, 28 percent to primary schools, 13 percent to vocational schools, and 6 percent to secondary schools.

#### Community

Communities provide substantial assistance for the construction and maintenance of primary schools. In the remote and mountainous areas the communities participate in the construction of schools, renewing walls and roofs, supplying labor and raw materials, clearing the ground, and giving housing, food and land to the teachers. In the lowland areas the parents pay an annual contribution (2,000-4,000 kip per student) to build and maintain the schools and sometimes to provide labor. For the villages with accessible roads, the government gives funds to purchase cement and galvanized iron sheets and the villages supply other building materials and labor. The district or the village authorities often receive funds or materials from the domestic enterprises to build the schools or sometimes they receive a turnkey building. Once a year, schools are authorized to organize a fete to raise funds for school maintenance.

#### Some Constraints

The people living in the isolated and mountainous areas are very poor. They work in the fields, forage, hunt, fish, and practice slash-and-burn cultivation to survive. They frequently build schools for their children with local non-durable materials. While the government is committed to helping these families by sending roofing sheets, cement, and other material for building the schools, there are often no transportation routes available.

In the lowland areas where villages are accessible by roads and people have some income, the construction of schools can be achieved and some support from the government is possible. An acceptable school for them is the semi-permanent building. Increasing parental contributions to construct new permanent schools would not be a feasible option.

## 5.4 Suggested Priorities and Recommendations

### Priority 1 Improvement of Facilities Management

The management of facilities should be improved at all administration levels. The problem is often not a question of purchasing new facilities but how to efficiently use the existing ones.

#### Recommendations

1. **Improve the Management of Schools:** First, schools have to be regularly maintained. Maintenance is necessary for the building (roof, wall, floor, ceiling), furniture (desk, bench, blackboard, cupboard) and other equipment particularly during the rainy season, and before the schools open. Parents and students can help with common works, while the funds from the communities, and government, if available, can be used to repair special works. To keep the schools clean, attractive and safe is the duty of the heads/principals of the schools. The principals should establish close contact with village authorities, parents associations and DEB to ensure good cooperation. In Lao PDR, there are many Buddhist monks. Each village has at least one pagoda and monks can help villagers to build schools, and the temple can be used for nonformal education.
2. **Strengthen the Role of DEB:** At district level, DEB is the bridge between schools and PES. DEB should make an annual physical inventory of buildings, furniture and equipment and report to PES. DEB should also inspect buildings on site as often as possible, and every year give awards to the best school heads/principals.
3. **Strengthen the Role of PES:** At the provincial level, PES should review and modify the requests of DEB and submit the requests to MOE for the next annual budget. This process will help schools interact with MOE and allow DEB to be in control of facilities management.

### Priority 2 Improvement of Project Management

The ADB and World Bank regulations offer direction for implementing the projects. However, applying them takes time, and to do so MOE must have competent staff.

#### Recommendations

1. **Improve the Staff of Project Management:** MOE and PES should improve the quality and quantity of staff in the construction service of MOE, and the provincial units for construction and development assistance (PUCDA). The supervision team should be strengthened by employing experienced engineers and applying the 'Time + Quality' system to manage the project.

2. **Improve the Cooperation between PUCDA and Communities:** MOE and PES should issue rules to encourage PUCDA and communities to monitor together the phases of construction, and make a last inspection before handover. The annual visits to the field by donors' representatives are useful to evaluate the progress of projects.
3. **Select Competent Contractors:** Under the local competitive bidding procedure, every effort should be made to prequalify and select only competent construction firms.
4. **Review the Payment Procedure:** To counteract any currency fluctuations, MOE and donors should review the payment procedure in order to shorten the time and develop a more effective and equitable system for payment to contractors.

### Priority 3 Improvement of Cost-Efficiency

#### Recommendations

1. **Identify Priority Projects:** To ensure efficient use of scarce resources, MOE should determine the priorities in facilities development by ranking the projects by province and district.
2. **Encourage People to Use Local Materials:** The governors of provinces should encourage contractors and communities to build schools using local materials.
3. **Continue Decentralization:** MOE should continue to implement the decentralization system, distribute the budget on time to the provinces and districts, and give more power to DEB and schools to manage their budgets. The transparency of all accounting processes is required.

### Priority 4 Appropriate Designs for Schools

In the past, some school designs have been too sophisticated. The toilets that were constructed were unsuitable to local customs, and some furniture was very expensive and used too much imported material. Galvanized iron sheets which are sometimes used tend to be too hot in the day and noisy during the rain.

#### Recommendations

1. **Keep Designs Simple:** The new designs must be simple, suitable, cheap and easy to construct and repair by local people.
2. **Select Appropriate Model:** Following the above criteria, there are three recommended new models of school buildings:

### Model A (Permanent Building)

The main components of this model are:

- materials: imported materials (less than 40 percent of the cost);
- main frame made with durable materials;
- roof covered with fiber-cement or galvanized iron sheets;
- wall made of bricks;
- standard furniture;
- life span of more than 40 years.

This kind of building is recommended for professional schools, institutes, universities, and some primary and secondary schools funded by government and external funds.

### Model B (Semi-permanent Building)

The main components of this model are:

- materials: imported materials (less than 20 percent of the cost);
- poles made of concrete;
- roof frame made of softwood or bamboo and covered with galvanized iron sheets or bamboo sheets or grass sheets available at local area (if covered with galvanized iron sheets, it is necessary to put a ceiling made of bamboo panel);
- walls made of bricks or mud or bamboo;
- very simple furniture;
- life span is more than 20 years, except the bamboo and grass elements.

This kind of building is recommended for the primary and secondary schools funded under the national budget with contribution from the community.

### Model C (Rudimentary Building)

The main components of this model are:

- materials: local materials (more than 90 percent of the cost);
- poles made of concrete, timber, or bamboo;
- all framework made of simple timber or bamboo;
- roof covered with bamboo or grass sheets;
- walls made of mud or bamboo;
- furniture made of bamboo or simple wood.

This kind of building is recommended for the primary schools in remote and mountainous areas with no access roads. The villagers supply timber, bamboo, labor and local materials; the district supplies other materials.

