

## CHAPTER II

# THE STUDY AREA

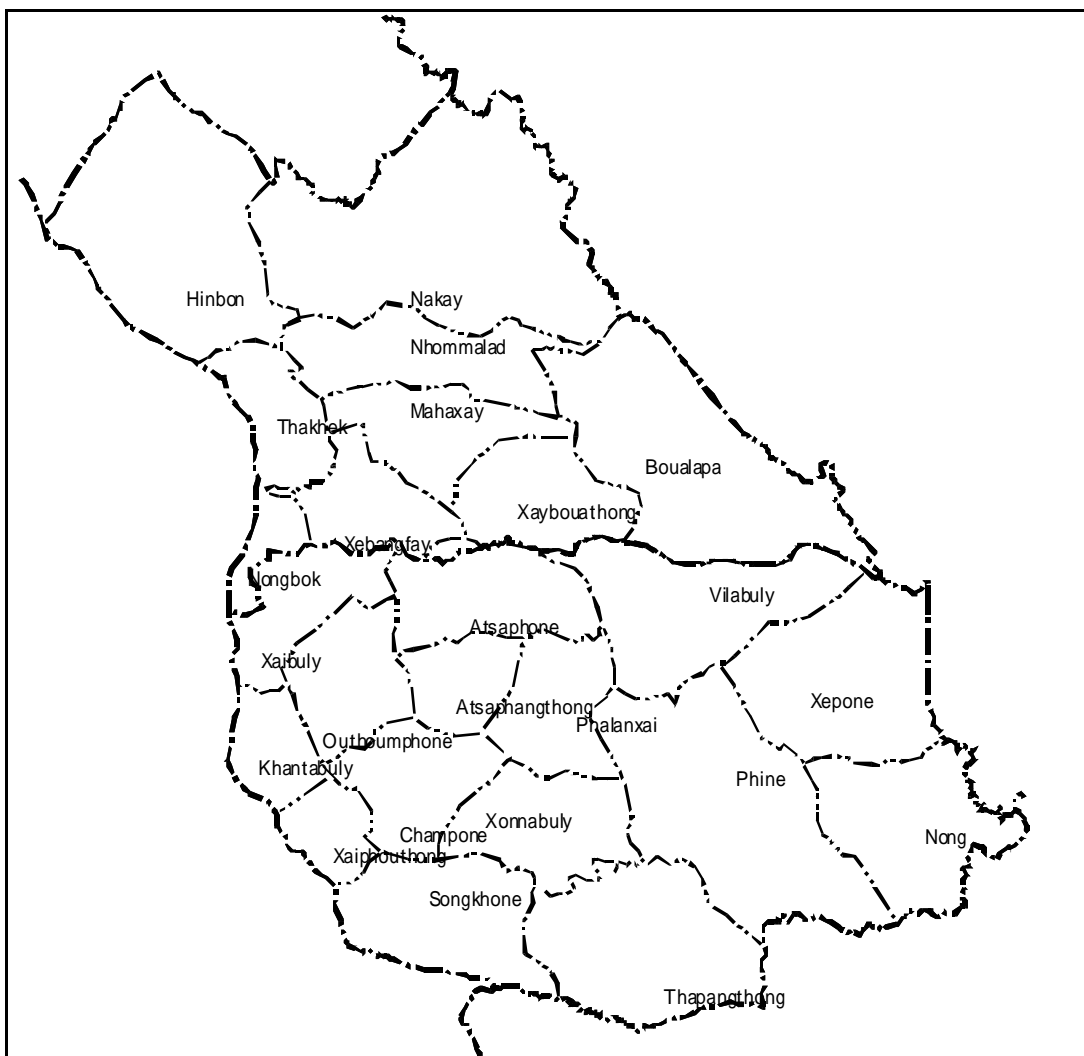
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This Chapter describes the current situation of the study area, with respect to the administrative, physical, social and economic conditions. Further, the study area is looked on in the national and inter-regional context. Subsequently, a problem structure of the study area will be clarified as a basis for development planning.

### 2.1 Administrative Area

The Savannakhet and Khammouan Region (SKR) is located in the central part of Lao PDR, bounded to the east by Vietnam and to the west by Thailand. The Mekong river runs along the border with Thailand. SKR has a total land area of 38,089 km<sup>2</sup> or 16.1% of the Lao territory and a total population of 1,07 million or 20.5% of the Lao population. SKR is linked by the trunk road, Route 13, running vertically along the Mekong river. To the south of SKR, Route 9 traverses horizontally as a principal component of the East-West Corridor.

Of the total land area in SKR, Khammouan occupies 16,315 km<sup>2</sup> (42.8%) and Savannakhet 21,774 km<sup>2</sup> (57.2%). SKR consists of nine districts in Khammouan, and 15 districts in Savannakhet. As illustrated in Figure 2-1, districts located in the eastern part of SKR have larger administrative areas than those in the west. This is a result of mountainous topography in the eastern part and several administrative subdivisions in the past due to the population increase. Since 1995, two districts have been subdivided and newly created in Savannakhet.



**Figure 2-1 District Composition in SKR**

Each district has nearly a hundred villages within the administrative area. According to the Integrated Rural Accessibility Plan (IRAP), Khammouan has 795 villages, while Savannakhet has 1,536. At the end of 2000, one municipality was established at the capital town of Savannakhet. The names of districts and the number of villages are listed in the following table:

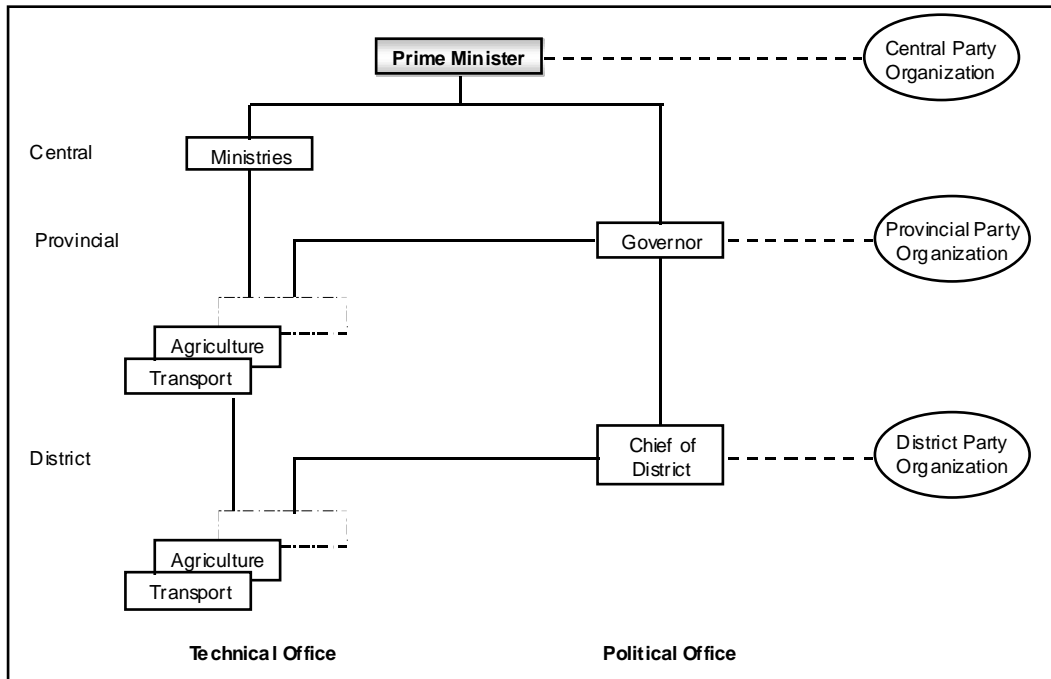
**The Study Area**

**Table 2-1 Administrative Setting in SKR**

Savannakhet Province				Khammouan Province			
District	Code	Area (km <sup>2</sup> )	Villages (No.)	District	Code	Area (km <sup>2</sup> )	Villages (No.)
Khanthabouly	1	521	94	Thakhek	1	981	137
Outhomphone	2	943	106	Mahaxay	2	1,404	85
Atsaphone	3	698	98	Nongbok	3	344	72
Phine	4	2,699	115	Hinboun	4	3,042	166
Sepone	5	3,255	161	Gnommalath	5	1,573	74
Nong	6	1,928	77	Boualapha	6	3,282	82
Thapangthong	7	2,931	76	Nakai	7	4,278	65
Songkhone	8	1,373	165	Sebangphai	8	907	49
Champhone	9	841	169	Xaybouathong	9	869	65
Xonnabouly	10	1,527	96				
Xaibouly	11	1,110	89				
Vilabouly	12	1,141	100				
Atsaphonthong	13	1,497	49				
Xaiphouthong	14	512	63				
Phalanexai	15	799	78				
Total			1,536	Total			795

Source: Provincial Census 1995, IRAP.

District and provincial administration is structured as shown in the following figure:



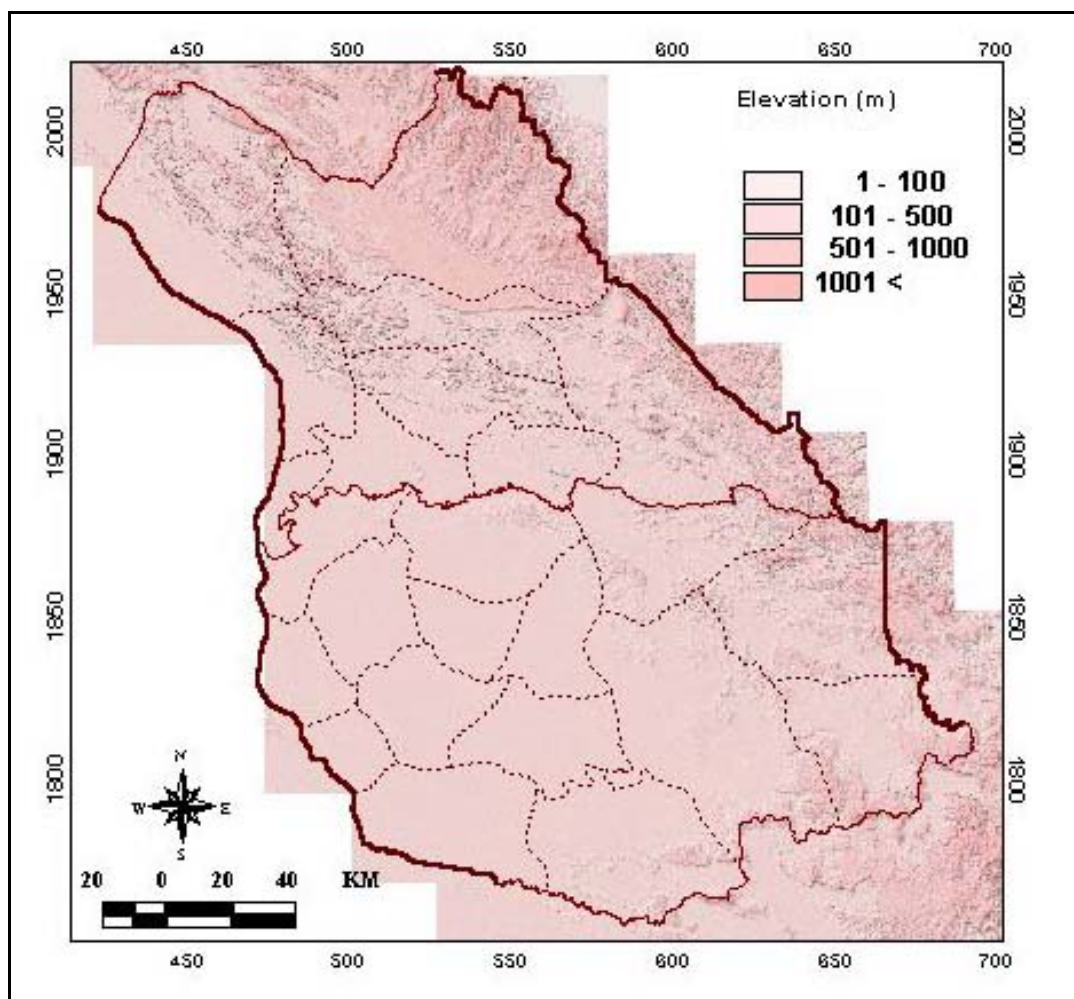
Source: Provincial Office

**Figure 2-2 Administrative Structure**

## 2.2 Physical Conditions

### 2.2.1 Natural Setting

Lao PDR is a mountainous country, but SKR has a relatively large proportion of flat areas. In general, altitude decreases from the northeast to the southwest. Correspondingly, most of the rivers flow in the same direction, and discharge into the Mekong river that forms the western boundary of SKR. The highest point lies at the northeastern corner of Khammouan, with an elevation above 2,000m. The lowest part is located southwest of Savannakhet with elevation of around 120m. The low-lying area, less than 200m in elevation, covers a large part of the central area in Savannakhet (47%). The average annual rainfall in the low-lying area is 1,400 to 1,500 mm.



Source: GIS Survey, 2000

Figure 2-3 Topographic Elevation

## 2.2.2 Land Use

### 1) Current Land Use

Based on the GIS survey (2000), SKR has a total wooded area of 81.5% (i.e., current forest area of 49.7%, potential forest area of 28.2% and other wooded area of 3.7%)<sup>1</sup>. The current forests mainly consist of dry evergreen, mixed deciduous, and dipterocarp forests. Due to topographic features of two provinces, the Rice Paddy area, which dominates the Permanent Agricultural Area, covers 8.0% in Khammouan and 13.6% in Savannakhet. Both provinces have a fairly small Urban Area (about 4,000 ha in total). A private forest plantation program covering an area of 50,000 ha in northwestern Khammouan has just started. Eucalyptus is to be grown for pulp production.

**Table 2-2 Current Land Use (2000)**

(Unit: 1,000 ha)

	Savannakhet		Khammouan		SKR Total	
<b>Total</b>	<b>2,140</b>	<b>100.0%</b>	<b>1,668</b>	<b>100.0%</b>	<b>3,808</b>	<b>100.0%</b>
<b>Wooded Area</b>	<b>1,801</b>	<b>84.2%</b>	<b>1,304</b>	<b>78.2%</b>	<b>3,105</b>	<b>81.5%</b>
Current Forest	1,076	50.3%	817	49.0%	1,893	49.7%
Potential Forest	674	31.5%	399	23.9%	1,073	28.2%
Other Wooded Area	51	2.4%	88	5.3%	139	3.7%
<b>Permanent Agriculture</b>	<b>292</b>	<b>13.7%</b>	<b>135</b>	<b>8.1%</b>	<b>427</b>	<b>11.2%</b>
Rice Paddy	290	13.6%	133	8.0%	423	11.1%
Agriculture Plantation	0	0.0%	0	0.0%	0	0.0%
Other Agriculture Land	2	0.1%	2	0.1%	4	0.1%
<b>Urban Area</b>	<b>3</b>	<b>0.1%</b>	<b>1</b>	<b>0.1%</b>	<b>4</b>	<b>0.1%</b>
<b>Others</b>	<b>44</b>	<b>2.1%</b>	<b>228</b>	<b>13.7%</b>	<b>272</b>	<b>7.1%</b>
Barren Lands/Rock	3	0.1%	197	11.8%	200	5.3%
Grass Land	10	0.5%	2	0.1%	12	0.3%
Swamps	13	0.6%	19	1.1%	32	0.8%
Water	18	0.8%	10	0.6%	28	0.7%

Note: Classification of Wooded Area is shown in Figure 2-4.

Source: JICA/Sida-NAFRI GIS Survey, 2000

<sup>1</sup> Classification of the current forest area, potential forest area and other wooded area is shown on the Land Use and Forest Type Map in Figure 2-4.

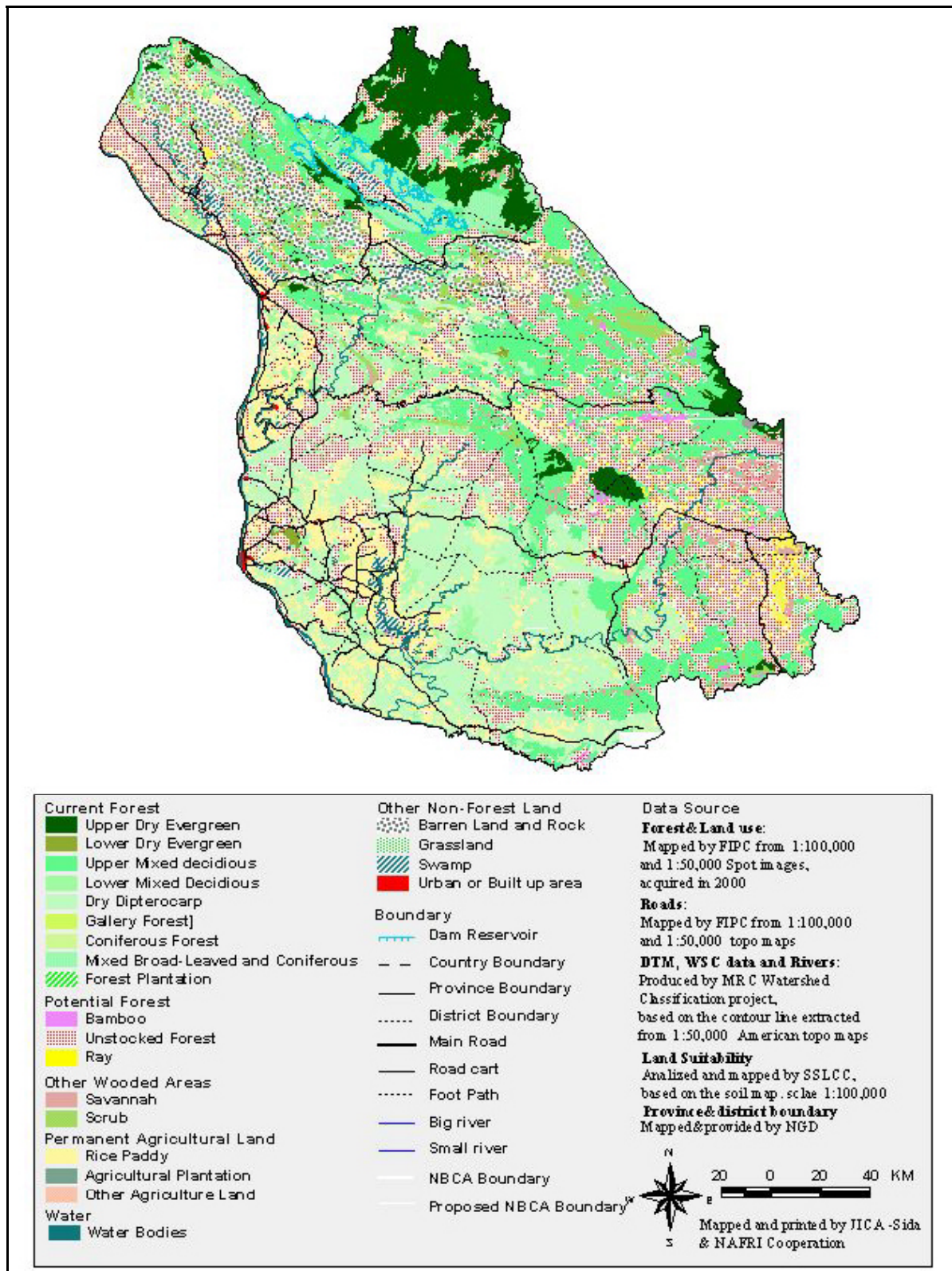
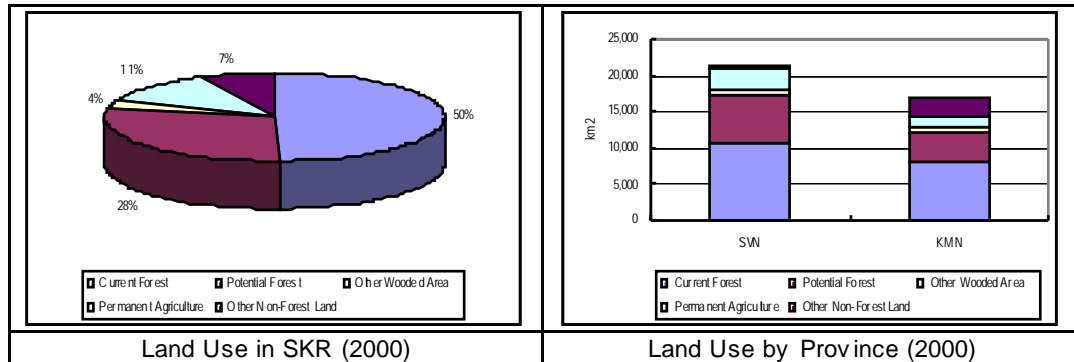


Figure 2-4 Land Use and Forest Type in 2000

**The Study Area**



**Figure 2-5 Current Land Use**

**2) Land Use Conversion**

SKR retains one of the highest proportions of intact forests, which, however, has decreased by 16% in the last 18 years since 1982. Current (high) forest has decreased from 55% in 1990 to 49% in 2000 and mostly degraded to potential forest. Degradation occurs through shifting cultivation, illegal and excessive logging, expansion of agricultural area in the low land area, and inadequate forest management and monitoring. Unless appropriate measures are taken, degradation in the forest area will be aggravated.

**Table 2-3 Land Use Conversion (1982, 1990 and 2000)**

(Unit: 1,000 ha)

Land Use/Vegetation	1982*		1990		2000		Change			
							1982-1990		1990-2000	
<b>Total</b>	<b>3,808</b>	<b>100.0%</b>	<b>3,808</b>	<b>100.0%</b>	<b>3,808</b>	<b>100.0%</b>				
<b>Wooded Area</b>	<b>3,426</b>	<b>89.97%</b>	<b>3,178</b>	<b>83.46%</b>	<b>3,105</b>	<b>81.54%</b>	<b>-248</b>	<b>-7.24%</b>	<b>-73</b>	<b>-2.30%</b>
Current Forest	2,251	59.11%	2,118	55.62%	1,893	49.71%	-133	-5.91%	-225	-10.62%
Potential Forest	736	19.33%	945	24.82%	1,073	28.18%	209	28.40%	128	13.54%
Other Wooded Area	439	11.53%	115	3.02%	139	3.65%	-324	-73.80%	24	20.87%
<b>Permanent Agriculture</b>	<b>227</b>	<b>5.96%</b>	<b>357</b>	<b>9.38%</b>	<b>427</b>	<b>11.21%</b>	<b>130</b>	<b>57.27%</b>	<b>70</b>	<b>19.61%</b>
Rice Paddy	225	5.91%	357	9.38%	423	11.10%	132	58.67%	66	18.49%
Agriculture Plantation	1	0.03%	0	0%	0	0%	-1	-	0	-
Other Agriculture Land	1	0.03%	0	0%	4	0.11%	-1	-	4	-
<b>Urban Area</b>	<b>17</b>	<b>0.45%</b>	<b>4</b>	<b>0.11%</b>	<b>4</b>	<b>0.11%</b>	<b>-13</b>	<b>-76.47%</b>	<b>0</b>	<b>0.00%</b>
<b>Others</b>	<b>138</b>	<b>3.62%</b>	<b>269</b>	<b>7.06%</b>	<b>272</b>	<b>7.14%</b>	<b>131</b>	<b>94.93%</b>	<b>3</b>	<b>1.12%</b>
Barren Lands/Rock	76	1.99%	201	5.27%	200	5.24%	125	164.47%	-1	-0.50%
Grass Land	25	0.66%	21	0.55%	12	0.32%	-4	-16.00%	-9	-42.86%
Swamps	5	0.13%	21	0.58%	32	0.84%	17	340.00%	10	45.45%
Water	32	0.84%	25	0.66%	28	0.74%	-7	-21.88%	3	12.00%

Source: 1982 : National Reconnaissance Survey  
1990 & 2000 : JICA/Sida-NAFRI GIS Survey, 2000

### 3) Land Use Limitations

SKR is rich in flora and fauna. Recognizing the importance of these areas, the government has established four National Biodiversity Conservation Areas (NBCAs) in Khammouan covering about 648,000 ha and three NBCAs in Savannakhet with a total area of about 363,000 ha. In addition, two more NBCAs migration corridors of 65,000 ha have been proposed between the existing NBCAs in Khammouan and a 7,000 ha extension of Pho Sang Hai NBCA in Savannakhet, which may be effected in 2001. In these NBCAs, all production activity is officially prohibited. These existing and proposed NBCAs cover 43% of the total land in Khammouan and 17% in Savannakhet. There are five National Protection Forests and Provincial Reservations in Savannakhet (totaling 295,700 ha) and six Protection Forest and Provincial Reservations in Khammouan (101,300 ha), covering slightly over 10% of the SKR area.

The mountainous districts in SKR witnessed different wartime and post-war experiences and they are stated to be the most Unexploded Ordnance (UXO)-impacted area in the country. Four areas are defined as heavily impacted by UXO in Savannakhet province, i.e., Xepon, Vilabuly and Nong, and the roads along the Ho Chi Minh Trail including routes 28 and 9. The area along the Trail entering the province via Boualapha in Khammouan was intensely bombed, and the eastern district of Boualapha is one of the most severely contaminated districts in the whole country.

Details of the current land use and its limitations are further discussed in the Sector Report, Chapter III-4.



The Study Area

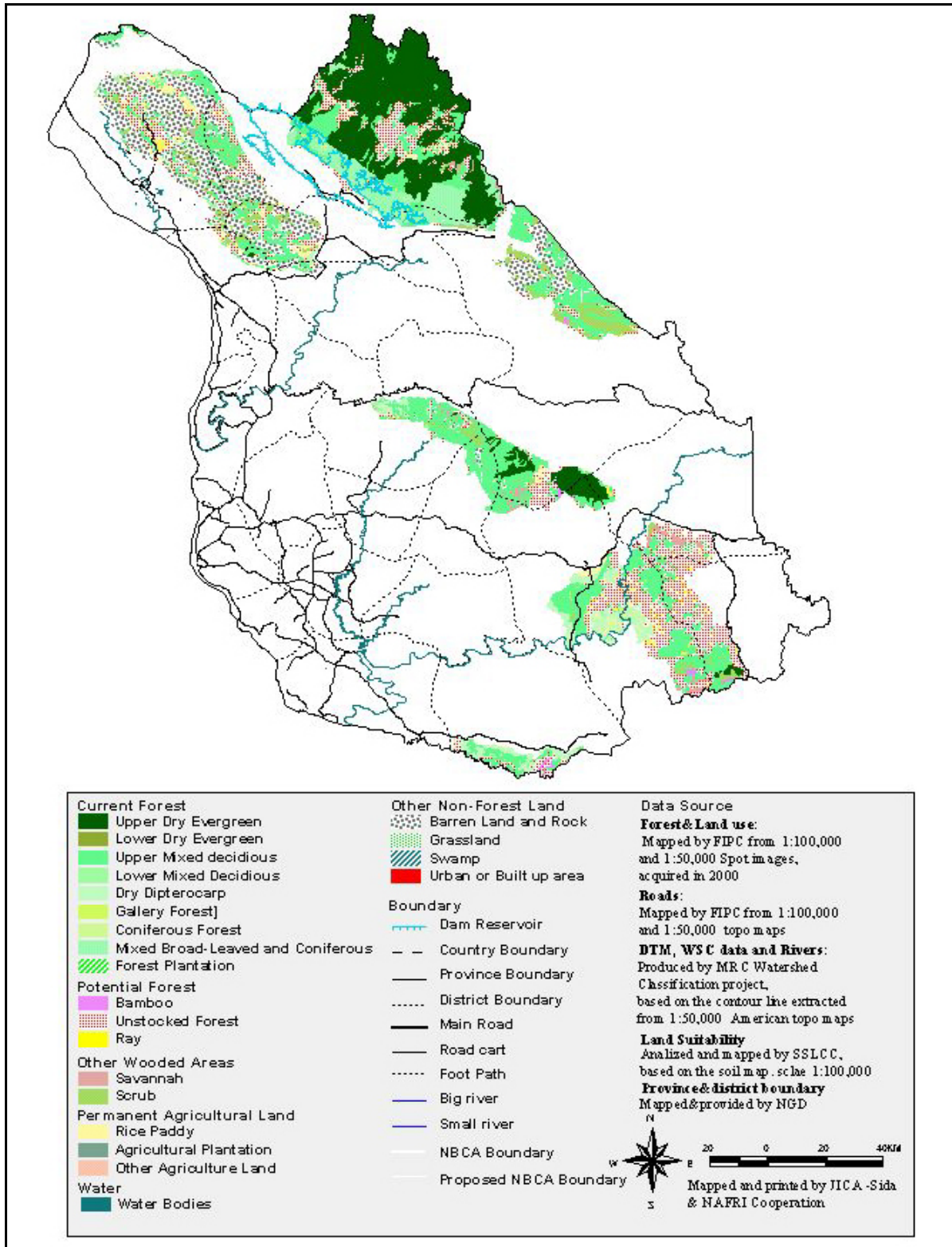


Figure 2-6 Protected Forest Area

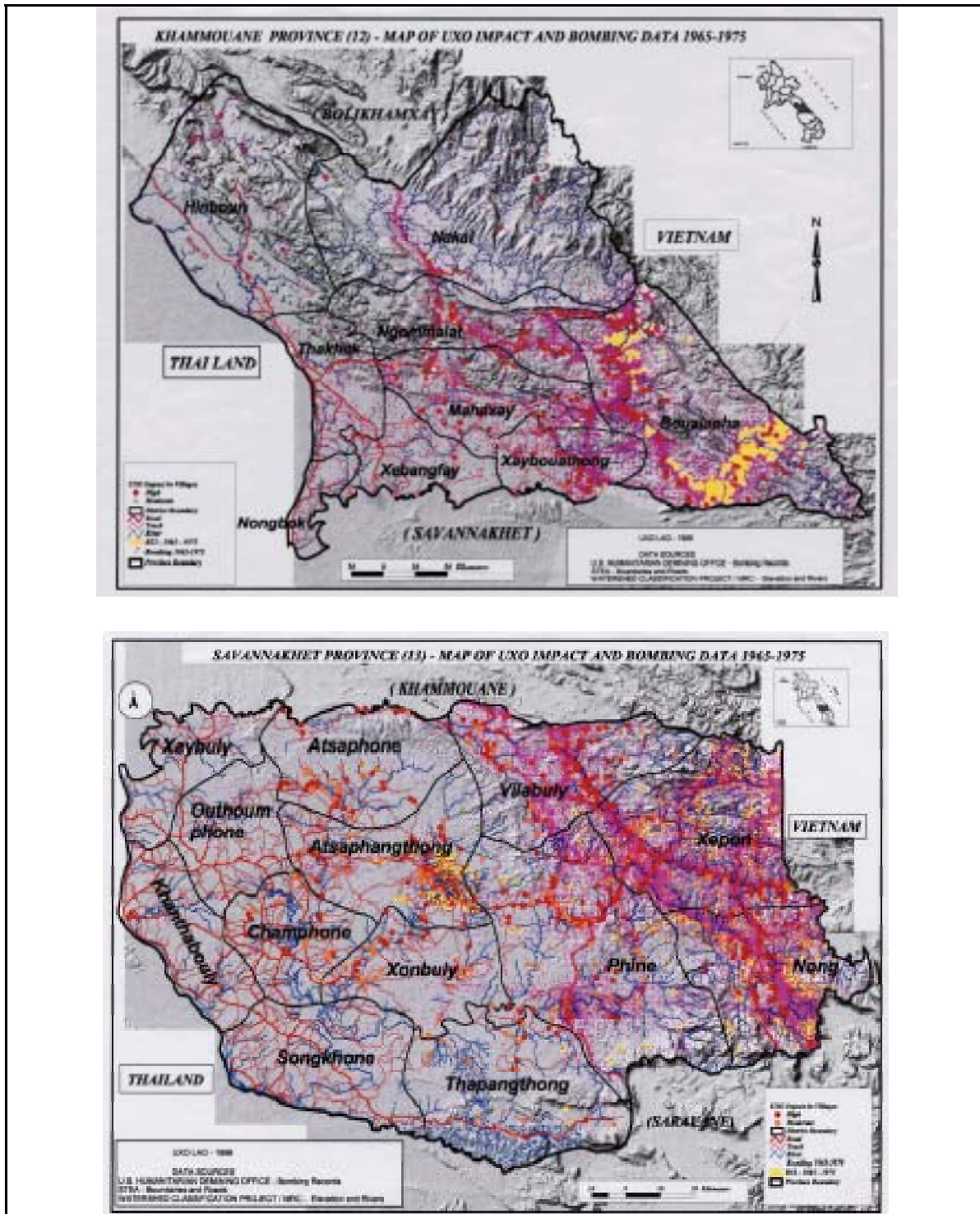


Figure 2-7 UXO Impacted Area