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### INCORRESPONDENCE OF PLANNING AND IMPLEMENTATION OF DONGDOK: VIENTIANE'S SUB-CENTRE FROM MAPS (1991- 2030)

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#### *Abstract*

The objective of this paper is to present incorrespondence of planning and implementation of a sub-centre named Dongdok through master plan and maps from 1991 to 2030. The study and analysis applied geographic information system (GIS) presenting three factors, land use, road network and boundaries of Dongdok area. Documents analysed in this paper have been accumulated from secondary sources, research papers, document reports, statistical data, relevant legal law including maps and satellite images. This paper summarises evolution and relation between Vientiane and Dongdok. Dongdok area has been planned individually for higher education area of Sisavangvong University since 1958 northward of capital before the master plan of Vientiane. In 1996, many vocational schools were reunified to establish the National University of Laos (NUOL). In 2011, 3<sup>rd</sup> master plan of Vientiane (2030) included this area as one of five sub-centre with the role of education town, new central business district (CBD) and suburban residential area to decentralise the city of Vientiane. In conclusion, this paper presents that planning of land use from the master plans of Vientiane and of Dongdok cannot lead to implementation. In contrary, development of road network and urban area around NUOL are incorrespondent to planning.

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**Keywords:** Incorrespondence planning, Dongdok sub-centre, Vientiane master plans, National University of Laos, Sisavangvong University.

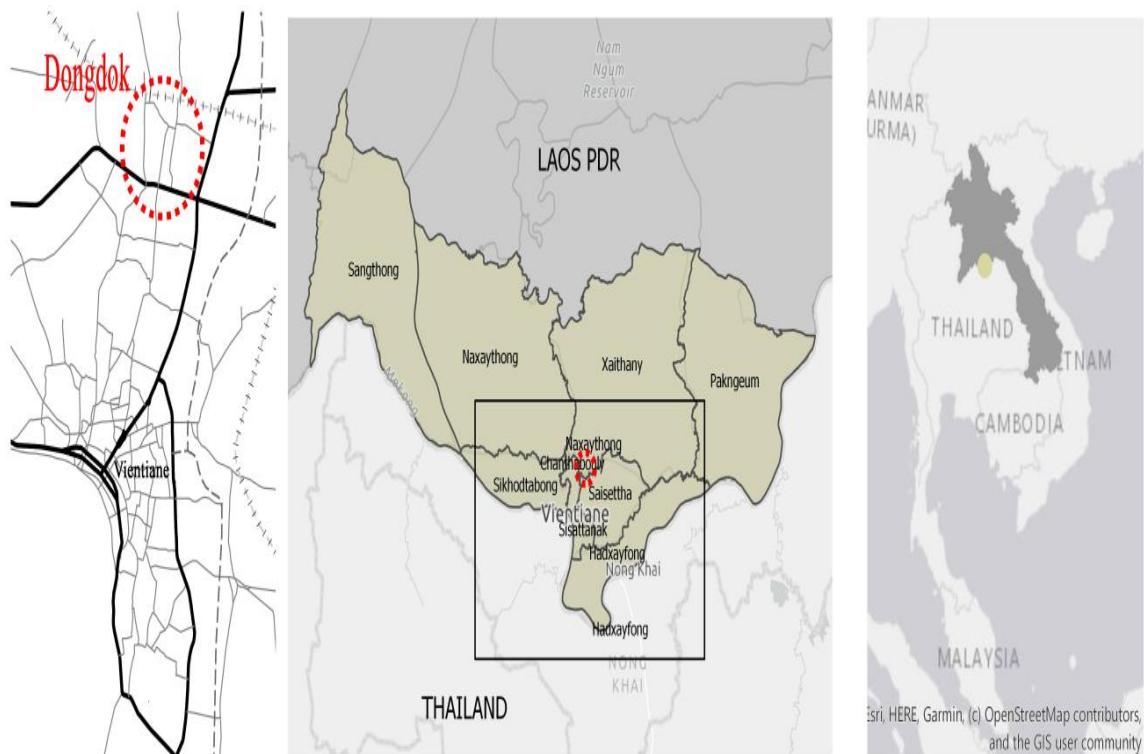


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## 1. Introduction

Dongdok is a sub-centre of the capital, Vientiane with a presence of National University of Laos (NUOL). This area presents correspondence of three factors, land use, road network and boundaries. In 1955, the United States Operations Mission in Laos planned to establish a university with assistance from Royal Lao Government. The first university was therefore created by Royal Ordinance in 1958 (Tippatts & Mc Carthy, 1961), named Sisavangvong University (SVU), which was the name of the king of Laos at that time (Teso, 1974). It was located in Dongdok Village (Chiemsisoulath & Sensombath, 2016) 9 Km in the north of Vientiane's downtown (Figure 1). In the year 1969, SVU had 3 institutes, the Pedagogical Institute located in Dongdok, the Royal Medical Institute and the Royal Laws and Administration Institute located in the downtown (Visiting Arts, 2005; Inthiphone, Phaboutdy, & Bouakhamvongsa, 2016). After government's reform in 1975, SVU was dissolved and divided into colleges. Dongdok area is then a location of Vientiane Teacher Training College (Inthiphone et al., 2016).

In 1987, the government has accomplished an economic reform program of New Economic Mechanism (NEM) leading to be the developing country (Khounphom, 1996), therefore education played a vital role and increased many higher educational institutions. However, these institutions had poor coordination, because of being controlled and managed separately from different ministries (Siharath, 2010). Education in Laos became more important and demanding in 1995 with Prime Minister's Decree, new university was established by an amalgamation of ten existing higher education institutions to be National University of Laos (NUOL) in Dongdok area. Economic growth and urban development had important role to support centralisation since the 1990s through many important laws, decrees, and regulations of urban planning (Vongpraseuth, Lee, & Choi, 2014).

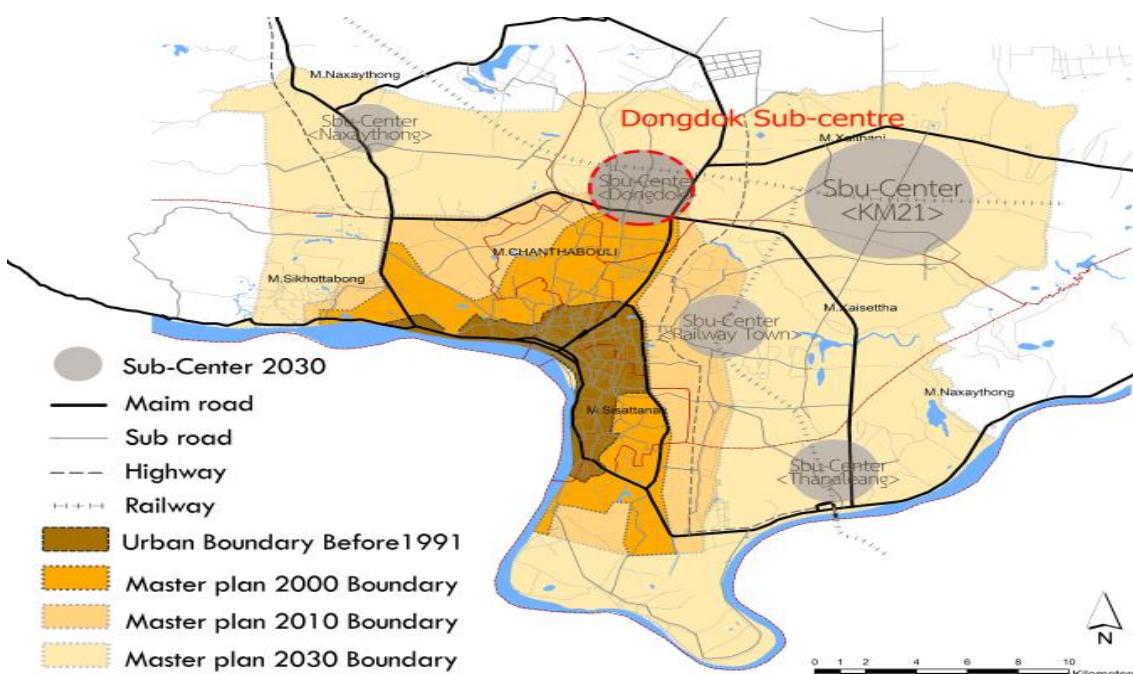


**Figure 01.** Location of Vientiane Capital and Dongdok area

Source: drawn by the authors in ArcGIS Pro

As being also influenced by planning of Vientiane, this paper therefore presents analysis of Vientiane's Infrastructure to Dongdok area. First master plan of the capital (1991-2002) was done after independence in 1975 produced the planning document by Indian consulting engineers (Askew, Logan, & Long, 2007). Second master plan (2002-2010) produced by Public Works and Transport Institute and the latest master plan (2011-2030). These 3 master plans were done by experts funded by the Japan International Cooperation Agency (JICA), (Figure 2). In 2017 the latest master plan of Vientiane has still not been approved by the Government (Peyronnie & Sisoulath, 2017), in 2019 it is not approved as well. The Master plan (2030) had proposed a multi-centred urban structure (Multi-core), with sub-centre and outer urban clusters with a goal to control the expansion of Vientiane and to avoid excessive densities of urban areas (PTI, MPWT, & JICA, 2011). Dongdok area has been planned to be one of five sub-centre of Vientiane (Figure 2), with the role of education centre, commercial, business and residence expansion

Since NEM has been applied for economic development policies, urban planning becomes more necessary for the expansion of infrastructure and urban growth in Vientiane. The rapid growth of population demand of residential buildings and economic conditions also lead to problems in economic and urban planning (Khounphom, 1996). The master plans of Vientiane (1991-2030) then had objective to control and management of urban expansion (Sharifi, Chiba, Okamoto, Yokoyama, & Murayama, 2014) and to invest in projects that located in both greenfield and built-up areas, which caused development of low-income residence in urban fringe areas (Vongpraseuth & Choi, 2015).



**Figure 02.** Master plans boundary and five sub-centres in the Master plan 2030

Source: drawn by the authors in ArcGIS Pro from various source

## 2. Problem Statement

Dongdok area had been originally planned as an educational area and had been developed before the adoption of the master plans of the capital, which were not related to the development of Dongdok

area. As being located far from the city centre (10km), there has been urban sprawl from Vientiane to Dongdok area. Thus, there were two main roads that connect between them, these roads served urban expansion and lead development of road network and urban development. According to Vongpraseuth and Choi (2015), presence of land use planning in the master plan 2030 does not relate with urban growth situation. In addition, the real urban development was correspondent with zoning map specification. This paper therefore compares Dongdok area with the Master plan of Vientiane to present their relation as land use, road network, the NUOL boundaries as part of sub-centre in Vientiane's master plan.

### 3. Research Questions

- From the analysis of three master plans of Vientiane and master plan of Dongdok, the research question is why planning is correspondent to implementation and to real development, from which factors?

### 4. Purpose of the Study

This article has the propose of the study to find the correspondence of planning and implementation through maps and to find the factor of the correspondence by analysing the three master plans of Vientiane Capital (1991-2002, 2002-2010, and 2011-2030) and the development in Dongdok sub-centre to present the evolution of them and their relationship.

### 5. Research Methods

The methods applied in this paper using cartographical analysis and comparison of maps of Dongdok area and Vientiane Capital also the three master plans, land used plan and road network map. Furthermore, secondary data was collected and represented with a scope of study according to the master plans timeline between 1991 and 2030. The data analysis has used computer software such as GIS and overlapping methods by remapping to the same classification of land use maps are in the same scale. All of these was objective to present the development patterns and physical factors influencing the relationships of them.

### 6. Findings

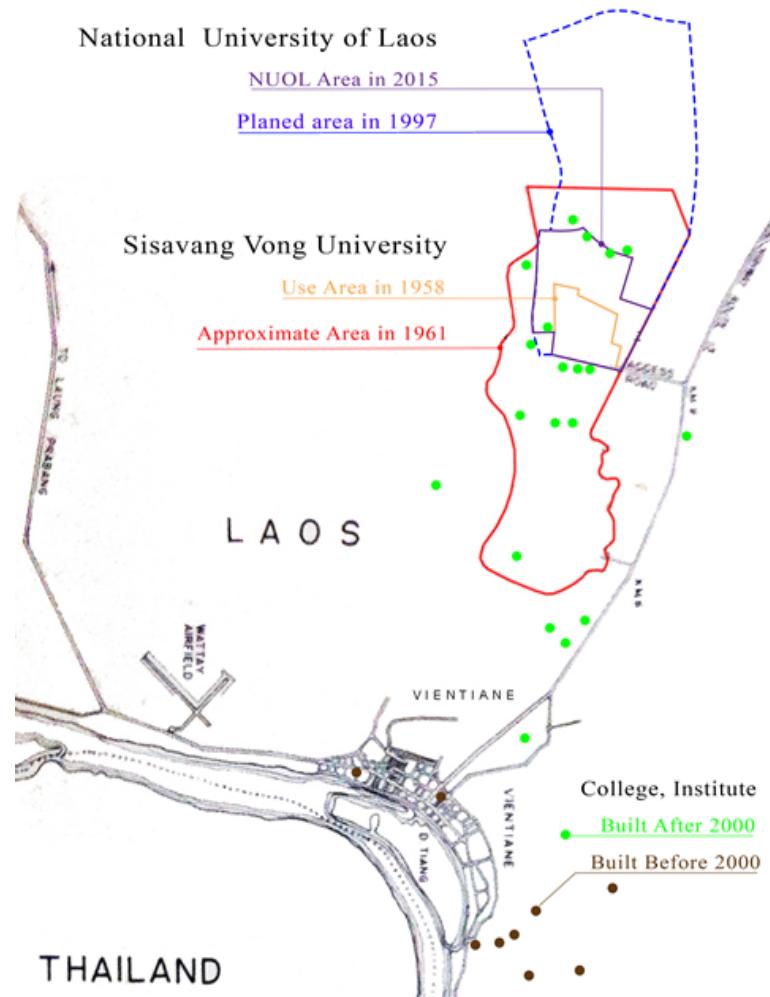
#### 6.1. Dongdok area evolution

Dongdok area used to be site of SVU since 1958, the area was only 0.6 Km<sup>2</sup>. Later in 1961, there was a plan to increase many faculties, the area of planning was approximately 134 Km<sup>2</sup> by extending from SVU area to the north and south side. In 1996, the NUOL was established from the reunifications of 10 existing higher education institutes and colleges, Dongdok was 1 of 5 the campus of NUOL composed of 7 faculties, 6 offices and one School of Foundation Studies (Inthiphone et al., 2016).

In 1997, the Asian Development Bank (ADB) supported NUOL for planning more 11 Km<sup>2</sup> northward of the former area. During the year 2000s, the number of higher education institutions increased in particular around NUOL (Figure 3). In 2005, NUOL has a total of 11 faculties which 7 of

them have located in Dongdok campus and others have located on their own campus around Vientiane. In 2019, there are 13 faculties and 9 of them located in the Dongdok.

In the year 2015, NUOL has a Master Plan of Dongdok Campus for improving education quality, urban development and for guiding investment or developing, with planning area of 2.5Km<sup>2</sup> which is the same area of the proposed land title belonging to NUOL.



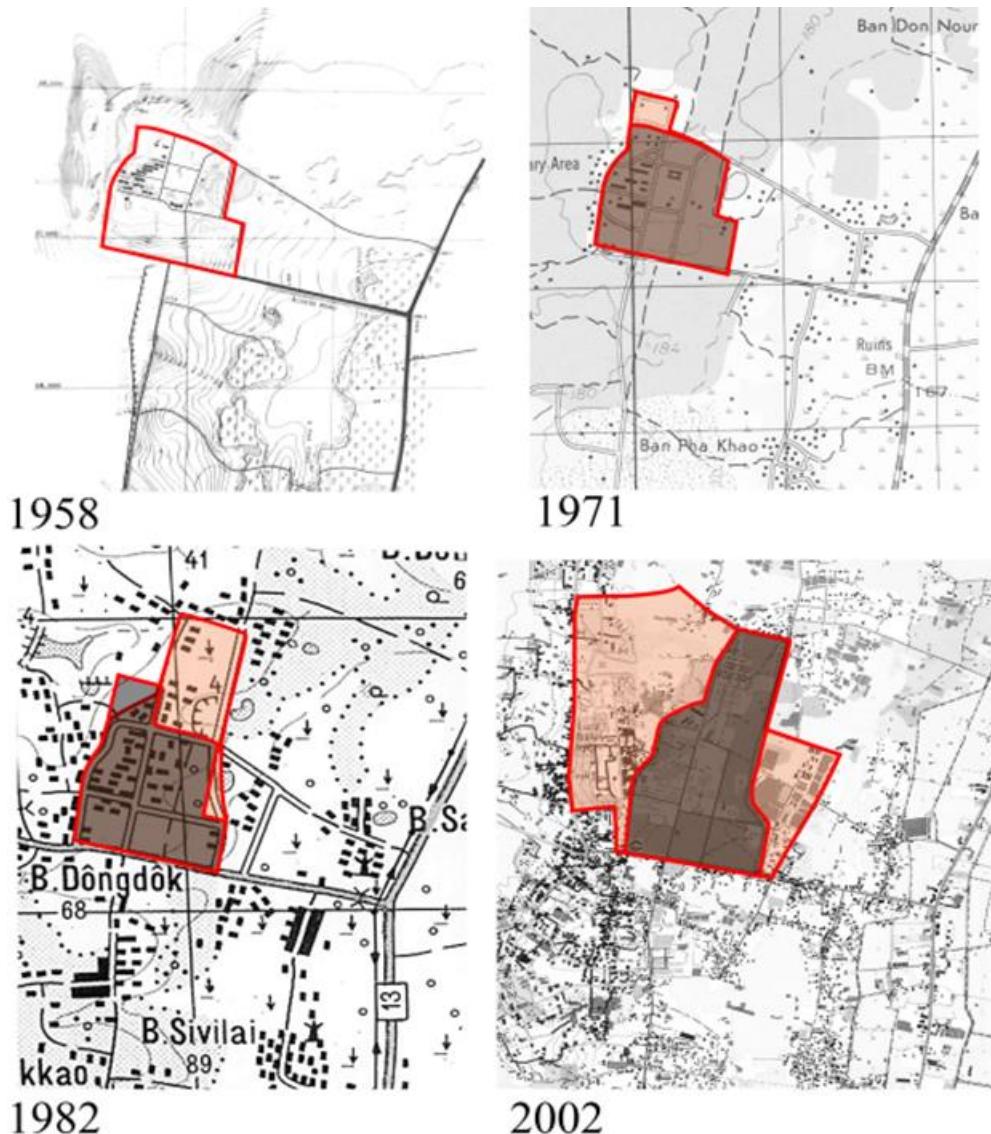
**Figure 03.** SVU and NUOL planning and actually border that used

Source: Redrawn by the authors based on Tippetts & Mc Carthy, (1961), Latsaphet (2016),

Chiemsisoulath & Sensombath (2016), and Department of Urban Environment (2019).

The planning area of NUOL in 1997 expanded to the north side of Dongdok village has divided the land area for various faculties (Figure 3). But the implementation of planning was not as expected, only few important buildings have been constructed, as the similar case of the planning of SVU in 1961. The area had been planed too wide but was unable to develop in total area. For those reasons, the planning areas were only used by the local people and increasing of residential continuously, that result in Dongdok area has reduced by only 2.5 km<sup>2</sup> in 2015. As can see from Figure 4 Dongdok area in 1958 had only buildings that related to education, such as classrooms building, dormitories, mess hall, teacher apartments (Tippetts & Mc Carthy, 1961). In the 1970 map, there were more residential buildings and in 1980 map, buildings and roads were increased. Map of 2002 presented an increase of many buildings due

to the establishment of NUOL as a national university, so that area has been developed and changed rapidly. In 2009, the 29<sup>th</sup> South East Asian Games held in Vientiane, Dongdok area has been improved of sports facilities, roads, and infrastructure and built an athletes village than be the dormitory of NUOL (Musil, Peyronnie, & Sisoulath, 2016).



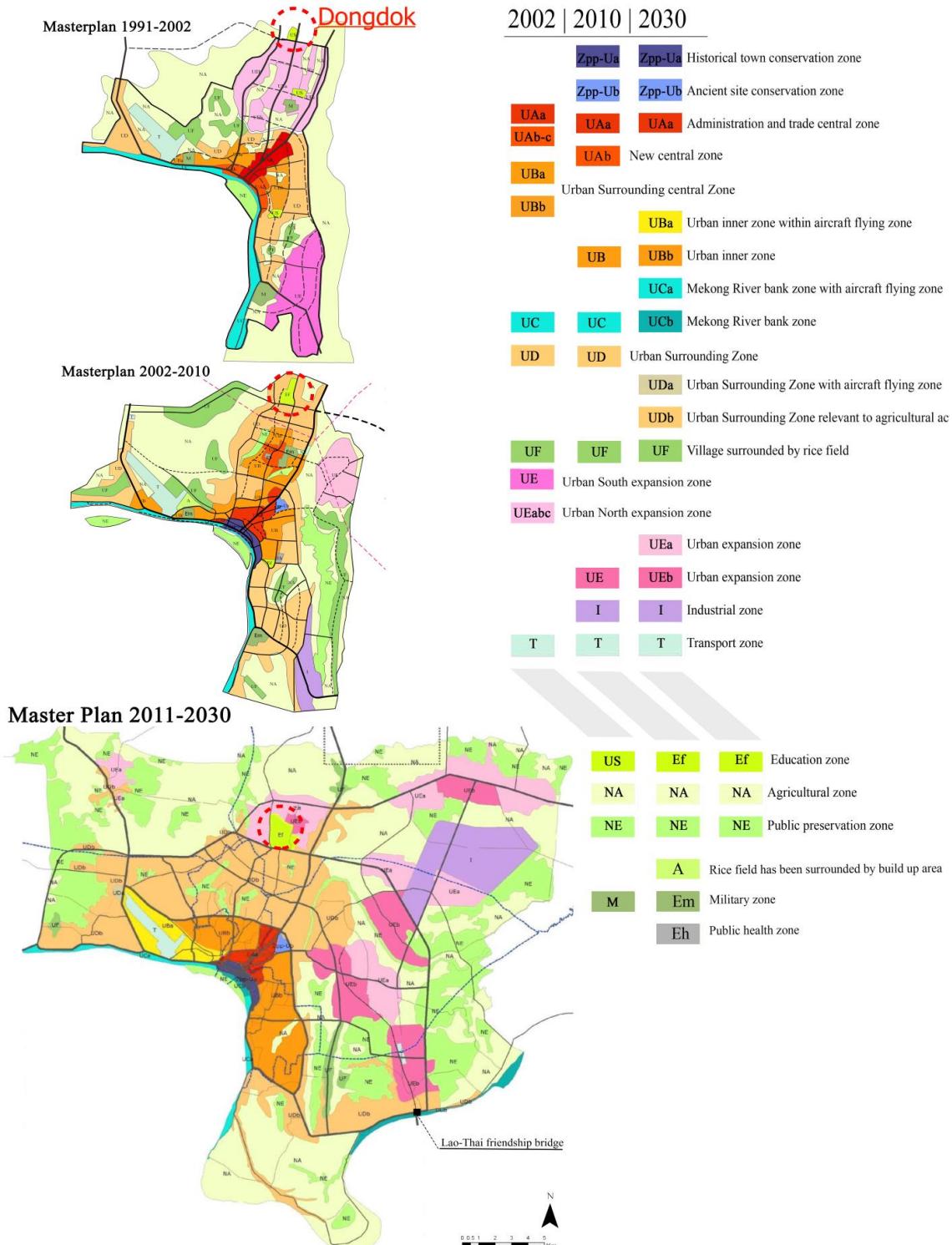
**Figure 04.** Borders used change of Dongdok area in the past

Source: draw by author base on Tippetts & Mc Carthy (1961), U.S. Army Map Service (1971), Service Géographique d'état 1982 & Sayarath (2005)

## 6.2. Vientiane Master Plans

The Vientiane's master plans have different boundaries, which depended on the expansion of the city. Between 1986 to 1991, the new master plan was formulated for Vientiane Capital and launch in the name “Schéma Directeur et d’Aménagement Urbain de Vientiane” with technical and financial assistance from UN-Habitat (Rabe, Thenekham, & Vongdeuane, 2007). On survey in order to designate a study area for the urban master plan is 89 villages in 1989 and next few years up to 100 villages in 1995 due to the division of large village into small villages (Khounphom, 1996). There are few sub-centres indicated in

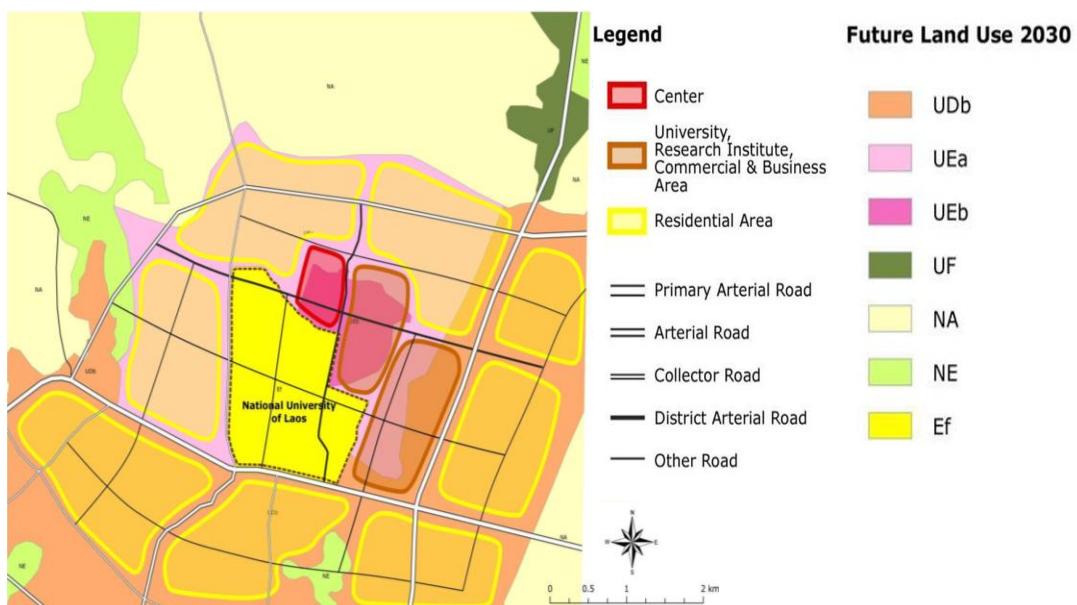
the plan in the proximity of urban centre. The Master plan of 1991-2002 was the first master plan covered a period of 10 years, with planned area of 93 km<sup>2</sup> and consisted of 150 villages(include urban area 100 villages) but Dongdok area did not include in the plan (Figure 5). The Master plan of 2002-2010 with planned area of 209.5 km<sup>2</sup> consisted of 189 villages, included in the planning area. The Master plan 2011-2030 with 617 km<sup>2</sup> planned area, Dongdok has been planned as 1 of the 5 sub-centres of Vientiane with the role of education, research and residential activities.



**Figure 05.** Future land use plan in the years 1991-2002, 2002-2010 and 2011-2030  
Source: Sisoulath (2003), PTI (2002) and PTI et al. (2011)

The master plan 1991-2002 has classified land-use into 13 types and Dongdok area is defined as Education Zone (Ef). The 2002-2010 master plan had 17 types, Dongdok area was planned as a new urban expansion with increased density. The Master plan of 2011-2030 has been improved from the previous one with the same type of land use plan, but Dongdok was defined as an educational zone with more expansion. In addition, the land use plan has been defined more precisely with classification as the Urban Surrounding Zone (UDb) that relevant to agricultural activities with height of building 15m and , Urban Expansion Zone (UEa-b) with height of building 23m , Educational Zone (Ef), with divided development zones as Centre, Universities, Research institutions, Commercial and Businesses, and Residential zone (Figure 6).

The development of urban infrastructure in those Master plans presented through many projects. In Master plan of 1991-2002, new roads to the Dongdok, Mittaphap Bridge which connected between Laos and Thailand, construction of drainage system and other urban development projects have been presented. In 2002-2010, planning of more new roads, railway, and road network that connected Dongdok to Mittaphap Bridge. In 2011-2030, the master plan has planned to develop into many suburbs or urban clusters as Dongdok sub-centre. The new road network has been planned with a land use plan, as illustrated in Figure 6. However, at present, there are only implemented projects in the university area. The surrounding areas are low-density housing.



**Figure 06.** Future land use plan of Dongdok sub-centre

Source: PTI et al. (2011)

## 7. Conclusion

Dongdok area has been planned and developed to be education area of Vientiane over 60 years as SVU and later as NUOL, that combined many different higher education institutions managed by the Ministry of Education and Sports. As being located far from the city, the unplanned urban expansion has been settled in between Dongdok Sub-centre and Vientiane along the road network. In addition, the

master plans of Vientiane in particular, the land use zone plans were not corresponded with the real development and with the University's master plan in case of the road network, land use, and boundary.

The boundaries of educational areas (Dongdok) presented in master plans of Vientiane were different. The development of NUOL in Dongdok sub-centre leads to an increasingly residential area more than educational purpose, which presented from road network and other urban facilities. The development of commercial area, residential development and service area around the university not only incorresponded to the intention of being an education centre but also these areas became the obstacle for development and expansion of the University.

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