



CHAPTER 5

Urban Development Management Program

CHAPTER 5: URBAN DEVELOPMENT MANAGEMENT PROGRAM

5.1 General Principles for Urban Development Management Program

Urbanization is a widely observed trend in the world, and this is true to Lao PDR, too. Primary cities in the nation tend to be faced with a strong pressure of urban growth, and this is true also to Vientiane Capital, which is the capital city of Lao PDR. The population of Vientiane Capital has been growing rapidly. In 1985, the population of Vientiane Capital was only 381,000, but in 2008, the population reached 740,000, as mentioned in Section 2.1. This corresponds to an annual average rate of about 3% over the 23 year period, which is considered to be very high in terms of long-term population growth rate.

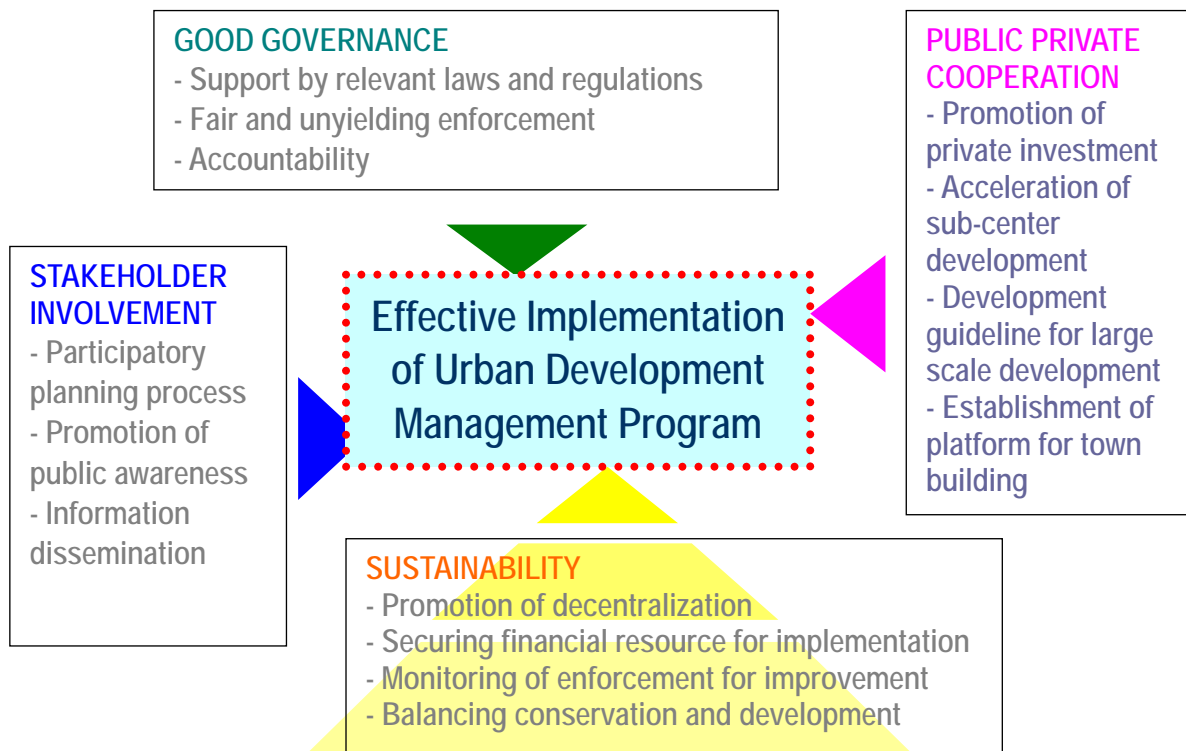
When the population in the city grows, either the city area has to be expanded, or the population density of the urbanized area has to be heightened, or both. In either case, the city has to go through intense pressure of transformation. However, when such changes are happening slowly than it may be either naturally absorbed within the existing urban area or could be consolidated in harmony. But when the change takes place very quickly and without much regulatory intervention, the transformation of the urban area may result in random, sporadic and uncontrolled urbanization, causing the deterioration of the urban environment. Such outcome often referred to as “urban sprawl” and has to be avoided by all means.

Thus the importance of urban planning for the growing cities such as Vientiane has been recognized. The urban planning involves depicting, analyzing and building on the desirable future image of the city shared by the residents of the city. The desirable future image of the city could be formulated as the vision in an urban master plan including the spatial structure, zoning and infrastructure networks. The urban planning thus commands a step to realize the residents’ perception of desirable future of the city.

The formulation of the master plan, despite its importance, may only mark the first step to regulate and control the urbanization that is taking place in the city. The real task comes after the formulation of the urban master plan – that is the enforcement and implementation of the urban master plan, namely the urban development management program (UDMP).

This chapter presents the principles, overview and outlines of UDMP, which relates to the enforcement and implementation of the urban master plan that has been formulated for Vientiane Capital and discussed in the previous chapters.

In this section at the outset, general principles to be observed in the implementation of the urban development management program shall be discussed. The following figure shows the overall structure of the principles related to effective and successful implementation of the urban development plan.



Source: JST

Figure 5.1.1 Principles for Effective and Implementation of Urban Development Management Program

5.1.1 Good Governance

Good governance is considered to be an indispensable element in UDMP, and it is important also in Lao PDR. The concept of good governance in urban planning generally relates to the democratic process and transparency in plan formulation, decision and enforcement.

(1) Support by Relevant Laws and Regulations

As urban development planning often involves partial regulation of individual's property right, the urban planning system has to be supported in full by laws and regulations officially enacted within the country's legal and administrative systems. However, there already some disparity exists between the law on urban planning, and the current urban master plan. This disparity also persists between the law and the proposed new urban plan by JICA Study Team and requires corrective action for seeking effective results. Thus, such disparity has to be adjusted by revising the laws and enacting sub-decrees and regulations as necessary.

(2) Fair and Unyielding Enforcement

The on-going urban master plan has not been enforced effectively, and consequently there are quite a few buildings which may not comply with the rules and regulations set forth in the existing current

urban master plan. One such example of impartial or weak enforcement is about non-following of stipulated rules/norms set for building height control. In historic zone, the building height limitation of less than 12 meters not being followed or enforced strictly.

When the rules and regulations are not observed strictly and fairly, people may feel unfair, and tend to disregard them or at best evade efforts to follow them. This kind of situation has to be adjusted.

In order to promote fair and unyielding enforcement, the urban development planning has to be established as administrative system supported by the laws and regulations, as mentioned earlier. For this, actions such as strict warning or penalization need to be imposed in case of any violation of rules and regulations as determined in the urban development master plan.

(3) Accountability

The public administrative body, such as Vientiane Capital, has to make judgment in the course of the enforcement of the approved urban master plan. Such decision may pertain to whether it should permit, for example, a large scale urban development project involving marshes, or whether it should permit a particular building to be built in the historic conservation zone. For such instances, the decision has to be taken without any delay.

The accountability means that the administrative action must be explained rationally and the reason for the decision should be accountable and acceptable. To increase the accountability in urban planning, the conditions for decisions have to be clarified in advance as rationally as possible, and compiled in a document form. The urban planning parameters, such as height of buildings, FAR and COS, are some of the conditions that need to be pre-determined in the urban development plan. Once a decision is made, the public body should be able to explain to the citizens about the rationality for such decision following the determined rules and regulations. Higher accountability in urban planning could minimize room for corruption in relation to urban development.

5.1.2 Stakeholder Involvement

An urban master plan pertains to a city inhabited by people, and thus in the first place it should reflect the opinions and perceptions of the people about their city. This is the reason why this Study has carried out a social survey and a key informant survey to understand the people's opinions, perceptions about the desirable future of Vientiane Capital. Stakeholder involvement shall provide the necessary strength to implement the urban master plan in sustainable manner over a long period of time.

(1) Participatory Planning Process

JICA has a Guideline for Social and Environmental Considerations which has been applied to various activities and studies carried out by JICA, including a master planning project such as the present study. It requires stakeholder involvement at an early stage of the study. As discussed in Section 1.6, the outcome and results of this study are mainly built on the discussion and direction received from the stakeholders during the Working Group meetings and Stakeholder Meetings.

During the implementation phase, the feedback from the stakeholders should be given priority



Source: JST

Figure 5.1.2: Public Seminar on Sustainable City for 450th Years Anniversary of Vientiane Capital

attention to improve the effectiveness of the implementation as well as providing the base for future revision of the master plan. Accordingly, the day to day feedback from the stakeholders has to be recorded and necessary analysis may be conducted as per requirement.

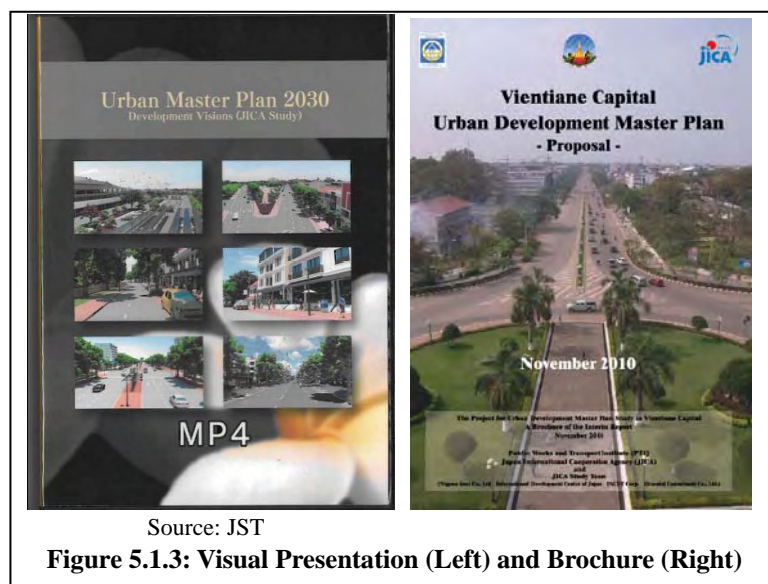
(2) Promotion of Public Awareness

Promotion of public awareness refers to improving the level of perception of general public about the issues related to improvement of Vientiane Capital. Higher public awareness would result in better understanding and will facilitate in the enforcement of the urban master plan and improving the landscape of the city.

The JICA Study Team produced a visual presentation (CG movie) of the proposed urban development master plan for 2030 in the form of a movie with the Lao language narration, and this presentation was shown to the general public of Lao PDR at the event of 450th year anniversary celebration of Vientiane Capital in November 2010. This is a good tool for promoting the public awareness about urban planning in Vientiane Capital.

(3) Information Dissemination

The urban master plan has to be shared with the citizens for their observation and use. Particularly the zoning map should be made available in proper scale to the citizens. This will be very useful to them while buying or leasing property or planning or designing a new building. Thus the urban master plan has to be made available either in the form of a hard or soft copy at the administrative office of Vientiane Capital and should easily be accessible to the citizens. Also, provision of providing necessary urban planning related information in a GIS format may also be considered.



The essence of the master plan was summarized in full color brochure. This brochure, as a tool for improving the understanding was distributed to the citizens during the event of 450th year anniversary celebration in Vientiane Capital.

5.1.3 Public and Private Cooperation

In general, a large part of the city is built for and by the private sector with the private funding. Such private part of the city comprises most of the housing units and commercial buildings meant for offices, hotels and shops. While the public part only encompasses the physical infrastructure such as road, water supply, sewerage and parks, and public service facilities such as public schools, hospitals and so on. Thus considering this, it is nearly impossible for the public sector to build the city alone with its limited resources. Thus, it requires extensive collaboration and/or cooperation with the private sector. In the following sub-section basic principles for promoting the public private partnership are elaborated.

(1) Promotion of Private Investment in Urban Development

The role of the private sector has been increasing rapidly as a partner in a number of urban development projects in the public sector. In general, private sector has better access to the market information and is more versatile and responsive in managing the project and making a profit from the investment than the public sector.

Competitive bidding is one of the most important principles in promoting PPP approach in urban development. The maximum value for money (VfM) is achievable only in a competitive bid where several bidders compete to win bid. Competitive bidding also minimizes the room for corruption and thus serves the benefits to citizens with the least cost of investment. Institutionalizing a basic policy for competitive bidding in PPP projects with a law or a regulation has to be considered immediately.

(2) Acceleration of Sub-center Development

Development of sub-centers will be a crucial task for Vientiane Capital to be a sustainable urban center for Lao PDR. Such large scale urban development shall be best achieved through the collaboration of the public and private sectors under a PPP arrangement, and with the support of international donors' agencies. Incentive scheme to promote investment in sub-center development should be considered. Such incentives schemes should be comparable with the scheme for Special Economic Zone (SEZ) development.

Also, the role of public sector will be crucial in promoting the sub-center development. For example, relocation of government offices to sub-centers could be one of the constructive steps for accelerating sub-center development. Promoting location of large university/colleges in sub-center is also considered to be effective in promoting and accelerating sub-centers development.

Mixing of industries with residential functions need to be avoided as much as possible as this may result in public nuisance in the form of air & water pollution, noise and vibration and concentration of heavy traffic such as trucks and trailers intruding in the city. Suitable sites for the location of industrial estate or industrial park need to be identified. It has to be ensured that operation of factories and industries will cause minimal or no public nuisance and pollution in future. Existing factories within the city center area have to be relocated gradually to new locations within sub-centers.

(3) Development Guideline for Large Scale Development

Even though carried out entirely by private sector, a large scale urban development project generally tends to place a burden on the public sector for in the provision of infrastructure development and social service. Thus some part of this additional burden by the large scale development project may be shared by the private sector developer, too, under a reasonable scheme. For the smooth execution of such sharing system, workable development guideline document may be prepared which will define the duties and responsibilities of the developers.

The development guideline may stipulate duties in relation to the following;

- Requirement of roads within the development area such as widths and sections;
- Requirement of flood regulation pond requirement to regulate the flood outflow from the development area to downstream;
- Requirement of parks and open spaces in relation to the total area of development, or per person of population;

- Requirement of public facilities such as schools and clinics in relation to per person of population; and
- Other requirements as practical and permissible.

(4) Establishment of Platform for Town Building

Establishing a new platform will be necessary and required for town building of Vientiane Capital, including improving the city's landscape, creating new parks, upgrading living environment in the city and conserving historic heritage.

As the town building activities require not only infrastructure development but also the improvement of individual buildings and houses, the platform must be established involving wide range of stakeholders involved in town building, such as hoteliers, shop owners, residents and land owners. For the establishment of this platform, the public sector should play the role of initiator/coordinator as well as the infrastructure provider.

International donors should support the activity of such platform as self-motivated and sustainable improvement movement.

5.1.4 Sustainability

The effects of urban master planning are gradual and cumulative. This is why the implementation of urban development master plan has to be sustainable in the sense that the effects of the plan continues to take place over the long period of time.

(1) Promotion of Decentralization

Attention needs to be paid on the decentralization of powers within the government. The urban planning systems need to be established by preparing relevant laws and regulations, which is mainly the task of the central government. While the municipality and regional governmental entity which are generally more familiar with local conditions especially the city/local government are expected to play an important role in formulation of day to day implementation plan of urban planning.

It is important to conceive that the main part of urban planning pertaining to a particular city should be carried out by the local government themselves. For this, the tasks of the central and local governments should be clearly delineated, so that there should be neither room for duplication nor there is any gap/loopholes.

(2) Securing Enough Financial Resource for Implementation

In many of developing economies, the majority of tax revenue and development assistance by international donors goes to the central government. This is also true to Lao PDR, and consequently local governments tend to be short in public finance for urban planning and development management.

For example in 2008, Vientiane Capital had total revenue of LAK 408,949 Million and the total expenditure of LAK 381,099 Million. Of the total expenditure, the expenditure for public investment amounted to LAK 59,935 Million. Considering the total population of Vientiane Capital at 740,000, the public investment by Vientiane Capital per person comes around LAK 81,000 or about USD 10 per person. This shows a clear shortage of public investment funding at the local level including Vientiane Capital and other secondary and smaller cities.

In order to replenish the funding requirement at the local level, reallocation of public revenue and donor assistance has to be seriously considered.

(3) Capacity Development of Staff for Urban Planning

Generally, high level human resources tend to be more concentrated in the central government where there are more opportunities for training or experiencing international works, whereas the local government tends to be understaffed and may lack in top notch professional personnel. This gap in the availability of high level human resources has to be rectified, as the local governments are expected to play larger and more important role in local administration

Continuous efforts for human resources development have to be carried out at all levels of government administration including the central and local government. This will enhance the public sector capacity for urban planning and development management.

Higher education for urban planning and development management needs to be improved to attract young people to pursue their career in this field. International donors should support this cause. Also, a system of registering professional engineers may be considered for establishing and creating a larger pool of well trained and educated professional engineers. Such system of expertise will be vital for the development of urban planning and urban management.

(4) Balancing Conservation and Development

If natural environment is lost, it will be irrevocable in the sense that it would not be possible to recreate it by human capability. Thus the importance of conservation is high in urban planning and development management. But if the urban master plan only looks at conservation, the energy of the city may be lost and the livelihood of the citizens may be affected.

Development is important in the light of activating and revitalizing the economy and accruing income to the residents of the city. But again, if only the concentration is towards development without any consideration for natural conservation, the city may lose the base for which it has flourished, and the development may not be sustainable.

Thus the development and conservation have to be well balanced. One may say that the development and conservation are two sides of the coin, meaning that two aspects of the city have to be well harmonized with each other. Eventually, the development and conservation shall be considered to be two elements to be harmonized on the same side of the coin.

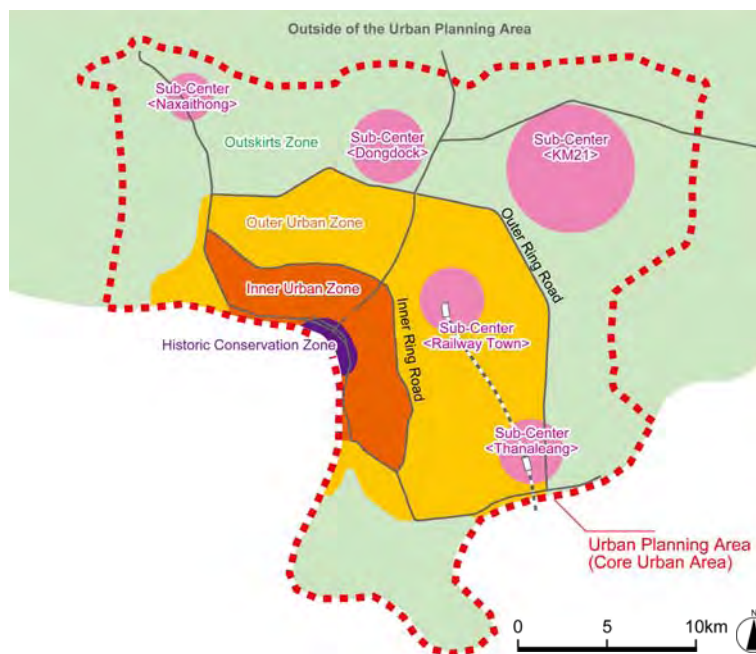
5.2 Sub-programs for Urban Development Management

5.2.1 Integrated Programming Approach

In order to implement urban development management comprehensively, each sector should undertake projects toward the proposed development visions in a synchronized manner. It is important to introduce an integrated programming approach to implement different sectors projects in mutual coordination with the different agencies responsible for implementation. Therefore, from the perspective of effectiveness and to achieve optimum results, the proposed projects from different sectors shall be integrated as a package of sub-programs. Such approach will be able to target specific places/zones for attaining best and effective results.

In order to attain the development visions and orientation, the sub-programs are classified according to the five (5) planning zones:

- Historic Conservation Zone
- Inner Urban Zone
- Outer Urban Zone
- Sub-center Zone
- Urban Cluster Zone



Source: JST

Figure 5.2.1: Planning Zones

5.2.2 Sub-programs and Projects to be implemented

To achieve the development visions toward 2030 and the sustainable urban development, in total 22 sub-programs were identified in five planning zones. Under these sub-programs, in total 59 projects were identified for implementation purpose.

(1) Sub-programs and Projects for Historic Conservation Zone

For the Historic conservation zone which is located in the urban center of Vientiane Capital, the zone’s profiles, policy and sub-programs are as follows:

Historic Conservation Zone			
Location	Inside the ancient ramparts	Zone Area	250 ha
Main Building Use	Public offices, Private offices, Embassies, Hospitals, Large & tourist hotels, Restaurants, Cafés, Souvenir stores, Retail hops, Colleges, Temples	Population 2030	11,000 persons
		Density 2030	44 pop/ha
Landscape			
Problems/Constraints - Policy- Sub-programs			
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> <p>Problems and Constraints</p> <p><i>Chap.2.5</i></p> </div> <div style="text-align: center;"> <p>Urban Development Policies</p> <p><i>Chap.3.4</i></p> </div> <div style="text-align: center;"> <p>Sub-programs</p> <p><i>Next page</i></p> </div> </div> <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p>Losing historic heritages, buildings and attraction of landscape</p> <p>Increase of international tourists</p> <p>Maintenance and improvement of urban infrastructure</p> <p>Increase of traffic volume and traffic jam</p> <p>Limited space for car parking</p> <p>More over-concentration of buildings</p> <p>Increase of high-rise and illegal buildings</p> <p>Limited space for new large-scale development</p> </div> <div style="width: 30%;"> <p>Conservation of historic heritages and buildings</p> <p>Development of the attractiveness as tourist resources</p> <p>Improvement of environment and urban transport</p> <p>Restriction of building control regulation</p> <p>Relocation of public facilities toward the Suburbs</p> </div> <div style="width: 30%;"> <p>H1 Historic Heritage Conservation</p> <p>H2 Heritage Tourism Development</p> <p>H3 Environment Improvement</p> <p>H4 Urban Transport Improvement</p> <p>H5 Landscape and Land use Improvement</p> </div> </div>			

The Historic Conservation Zone is located inside of the ancient ramparts along the Mekong River. This zone is the original location of Vientiane from which the present day Vientiane Capital developed. This zone consist of the guest houses/hotels and restaurants/cafes for visitors and tourists.

Considering the attractiveness of this zone to the visitors and tourists, mainly due to its rich historical and cultural assets, the historical heritages must be preserved by all means to maintain its historical culture. For this, restriction and control of new building as well as renovation and demolition of existing buildings have to be regulated.

In order to enhance the attractiveness and livelihood of the zone, the public offices, such as the ministerial offices, local government offices and other public facilities which are located in this zone need to be considered for relocation to suburban areas.

As this zone has the highest population density among all areas in Vientiane Capital, the large volume of traffic against the carrying capacity of the existing roads is one of the major issue for the residents. As drastic changes in the existing transport network, such as widening of roads, may be restricted due to the need for conservation of historical heritage, urban transport has to be considered for improvement.

Thus, following the urban development policies, the following sub-programs and projects as listed and summarized below were identified for Historic conservation zone:


Table 5.2.1: List of Sub-programs and Projects for Historic Conservation Zone

Sub-program		Project	
H1	Historic Heritage Conservation Sub-program	H1-1	National Heritage Registration Project
		H1-2	Historic Landscape Conservation Sub-Zoning Project for Surroundings of Heritages
H2	Heritage Tourism Development Sub-program	H2-1	Heritage Tourism Development Project
		H2-2	Community Base Tourism Road Development Project
		H2-3	Tourism Promotion Project
H3	Environment Improvement Sub-program	H3-1	Drainage Improvement Project
		H3-2	Sewerage System Construction Project
		H3-3	Solid Waste Disposal Improvement Project
		H3-4	Park Large-Trees Planting Project
H4	Urban Transport Improvement Sub-program	H4-1	Primary Roads Improvement Project
		H4-2	Secondary Roads Improvement Project
		H4-3	Public Transport Improvement Project
		H4-4	BRT Development Project
H5	Landscape and Land use Improvement Sub-program	H5-1	Building Control Regulations Refinement Project
		H5-2	Public Facility Relocation Project

Source: JST

(2) Sub-programs and Projects for Inner Urban Zone

In the Inner urban zone which is located outside of the historic conservation zone and inside of the inner ring road, the following urban development policy should be taken into account:

Inner Urban Zone			
Location	Outside the Historic Conservation Zone and inside the Inner Ring Road	Zone Area	5,120 ha
Main Building Use	Houses, Commercial buildings, Public offices, Private offices, Embassies, Hotels, Restaurants, Collages	Population 2030	219,000 persons
		Density 2030	43 pop/ha
Landscape			
Problems/Constraints - Policy- Sub-programs			
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p style="background-color: purple; color: white; padding: 2px;">Problems and Constraints</p> <p style="font-size: small; color: purple;">Chap.2.5</p> </div> <div style="text-align: center;"> <p style="background-color: green; color: white; padding: 2px;">Urban Development Policies</p> <p style="font-size: small; color: green;">Chap.3.4</p> </div> <div style="text-align: center;"> <p style="background-color: blue; color: white; padding: 2px;">Sub-programs</p> <p style="font-size: small; color: blue;">Next page</p> </div> </div>			
<div style="display: flex; justify-content: space-between;"> <div style="width: 30%; border: 1px solid purple; padding: 5px;"> <p>Necessity of intensive land use for commercial and business function</p> <p>Insufficiency of competitive functions in GMS</p> <p>Limited space for new large-scale development</p> <p>Improvement of living environment in residential area</p> <p>Increase of traffic volume and traffic jam</p> <p>Maintenance and improvement of urban infrastructure</p> <p>Losing marshes and lacking parks and green</p> </div> <div style="width: 30%; border: 1px solid green; padding: 5px;"> <p>Acceleration of urban redevelopment for business intensification</p> <p>Relocation of large-scale factories, logistic facilities</p> <p>Improvement of living environment</p> <p>Encouragement of environment-friendly residential developments</p> <p>Conservation of the existing natural environment</p> </div> <div style="width: 30%; border: 1px solid blue; padding: 5px;"> <p>I1 Business Area's Land Use Intensification</p> <p>I2 Living Environment Improvement</p> <p>I3 Inner Urban Road Network Improvement</p> <p>I4 Public Transport Improvement</p> <p>I5 Marshes Conservation and Park Improvement</p> </div> </div>			

Inner Urban Zone is the area outside of the ancient ramparts and inside of the Inner Ring Road. This zone is primarily a new urban area just outside of the Historical Conservation Zone, which serves as the central business district (CBD) of Vientiane Capital.

This zone will accommodate about 219,000 persons in 2030, which will be a significant portion of the urban population in Vientiane Capital. This zone at present has a large area of undeveloped areas such as marshes and river channels. In pursuing new urban development, the value of the natural features such as the marshes and rivers must not be forgotten and accordingly, the environmentally friendly residential development should be initiated.

When the urban area expands, attention need to be paid to the living environment, including improvement of road network, extension of drainage system and improvement of transport system. Also, the presence of large scale factories and logistic facilities needs to be gradually relocated to suburban areas and in sub-centers.

The new urban area will not be active unless proper commercial and business functions are located at the strategic places in the new residential area. To attain this, the acceleration of urban redevelopment which will be able to create more spaces for commercial and business uses are to be encouraged.

Thus, following the urban development policies, the following sub-programs and projects as listed and summarized below were identified for Inner Urban Zone:


Table 5.2.2: List of Sub-programs and Projects for Inner Urban Zone

Sub-program		Project	
I1	Business Area's Land Use Intensification Sub-program	I1-1	ICT Infrastructure Strengthening Project
		I1-2	Urban Redevelopment Acceleration Project
		I1-3	Public Facility Relocation Project
I2	Living Environment Improvement Sub-program	I2-1	Water Infrastructure Improvement Project
		I2-2	Solid Waste Disposal Improvement Project
I3	Inner Urban Road Network Improvement Sub-program	I3-1	Primary Roads Improvement Project
		I3-2	Secondary Roads Improvement Project
		I3-3	Streetscape Improvement Sub-Program for Arterial Roads
I4	Public Transport Improvement Sub-program	I4-1	Public Transport Improvement Project
		I4-2	BRT Development Project
I5	Marshes Conservation and Park Improvement Sub-program	I5-1	Nong Douang Marsh Park Construction Project
		I5-2	Nong Chan Marsh Park Construction Project
		I5-3	Existing Marsh Conservation Project
		I5-4	Park Large-Trees Planting Project

Source: JST

(3) Sub-programs and Projects for Outer Urban Zone

In the Outer urban zone which is located between the inner ring road and the outer ring road, the following urban development policy should be taken into account:

Outer Urban Zone			
Location	Mainly between the Inner Ring Road and the Outer Ring Road	Zone Area	14,540 ha
Main Building Use	Houses, Commercial buildings, Roadside stores, Hotels, Factories, Conference halls, Collages	Population 2030	300,000 persons
		Density 2030	21 pop/ha
Landscape			
Problems/Constraints - Policy- Sub-programs			
<div style="display: flex; justify-content: space-between;"> <div style="width: 30%; border: 1px solid purple; padding: 5px;"> <p style="text-align: center; color: purple;">Problems and Constraints</p> <p style="text-align: center; font-size: small; color: purple;"><i>Chap.2.5</i></p> <ul style="list-style-type: none"> <li style="border: 1px solid purple; padding: 2px; margin-bottom: 5px;">Insufficient residential area for future <li style="border: 1px solid purple; padding: 2px; margin-bottom: 5px;">Expansion of urban area without control <li style="border: 1px solid purple; padding: 2px; margin-bottom: 5px;">Land speculation without control <li style="border: 1px solid purple; padding: 2px; margin-bottom: 5px;">Unpaved dirt feeder road <li style="border: 1px solid purple; padding: 2px; margin-bottom: 5px;">Requires improved living environment in residential area <li style="border: 1px solid purple; padding: 2px; margin-bottom: 5px;">Requires development of urban infrastructure (water supply, sewerage, drainage, solid waste) <li style="border: 1px solid purple; padding: 2px; margin-bottom: 5px;">Losing large-scale marshes and existing protected areas <li style="border: 1px solid purple; padding: 2px; margin-bottom: 5px;">Losing forests and agricultural land </div> <div style="width: 30%; border: 1px solid green; padding: 5px;"> <p style="text-align: center; color: green;">Urban Development Policies</p> <p style="text-align: center; font-size: small; color: green;"><i>Chap.3.4</i></p> <ul style="list-style-type: none"> <li style="border: 1px solid green; padding: 2px; margin-bottom: 5px;">Acceleration of new urbanizing area <li style="border: 1px solid green; padding: 2px; margin-bottom: 5px;">Improvement of road network <li style="border: 1px solid green; padding: 2px; margin-bottom: 5px;">Improvement of living environment <li style="border: 1px solid green; padding: 2px; margin-bottom: 5px;">Conservation of the existing natural environment </div> <div style="width: 30%; border: 1px solid blue; padding: 5px;"> <p style="text-align: center; color: blue;">Sub-programs</p> <p style="text-align: center; font-size: small; color: blue;"><i>Next page</i></p> <ul style="list-style-type: none"> <li style="border: 1px solid blue; padding: 2px; margin-bottom: 5px;">O1 New Urbanizing Area Development <li style="border: 1px solid blue; padding: 2px; margin-bottom: 5px;">O2 Living Environment Improvement <li style="border: 1px solid blue; padding: 2px; margin-bottom: 5px;">O3 Water-front Conservation and Park Improvement <li style="border: 1px solid blue; padding: 2px; margin-bottom: 5px;">O4 Road Network Improvement <li style="border: 1px solid blue; padding: 2px; margin-bottom: 5px;">O5 Public Transport Improvement </div> </div>			

Outer Urban Zone is located mainly between the Inner Ring Road and the Outer Ring Road and at present is partly occupied by residential area. This zone has mainly developed along the major roads and thus still has large vacant lands for urbanization.

In future, this zone is expected to accept a number of residents in accordance with economic growth and population increase in Vientiane Capital. As per estimates, in future this zone will accommodate a large population of 300,000 persons. Thus, this zone should be properly developed to provide new residential areas with good living environments. To achieve such environment, the emphasis should be on improving the infrastructure such as collector road, water supply, sewerage, drainage etc. The population density will be kept lower than the inner urban zone.

Development demand will continue and large-scale development activities will occur in this zone. Considering this, the developments should be controlled and regulated properly with environmental friendliness. The development outside of designated urban area should be prohibited to control urban expansion. In this context, it is also important to conserve existing natural environment, especially large-scale marshes such as That Luang marsh, Nong Ping marsh and Nong Tha marsh for flood control and recreation.

Thus, following the urban development policies, the following sub-programs and projects as listed and summarized below were identified for Outer Urban Zone:


Table 5.2.3: List of Sub-programs and Projects for Outer Urban Zone

Sub-program		Project	
O1	New Urbanizing Area Development Sub-program	O1-1	Nong Ping Area Development Project
		O1-2	New Residential Area Development Project
O2	Living Environment Improvement for Residential Area Sub-program	O2-1	Water Infrastructure Improvement Project
		O2-2	Solid Waste Disposal Improvement Project
O3	Water-front Conservation and Park Improvement Sub-program	O3-1	Large-scale Marshes Conservation Project
		O3-2	River-front Improvement Project
		O3-3	New Public Park Construction Project
O4	Road Network Improvement Sub-program	O4-1	Primary Roads Improvement Project
		O4-2	Secondary Roads Improvement Project
O5	Public Transport Improvement Sub-program	O5-1	Public Transport Improvement Project
		O5-2	Railway Extension Project

Source: JST

(4) Sub-programs and Projects for Sub-center Zone

In Sub-center zone which is developed as a new urban accumulation to relocate certain urban functions from the urban center and to receive new urban activities, the following urban development policy should be taken into account:

Sub-center Zone			
Location	Specific zones in the Outer Urban zone and the Outskirts zone	Zone Area	10,780 ha
Main Building Use	Houses, Private offices, Roadside stores, Stadium, Universities	Population 2030	315,000 persons
		Density 2030	29 pop/ha
Landscape			
Problems/Constraints - Policy- Sub-programs			
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p style="background-color: purple; color: white; padding: 2px;">Problems and Constraints</p> <p style="font-size: small; color: purple;">Chap.2.5</p> </div> <div style="text-align: center;"> <p style="background-color: green; color: white; padding: 2px;">Urban Development Policies</p> <p style="font-size: small; color: green;">Chap.3.4</p> </div> <div style="text-align: center;"> <p style="background-color: blue; color: white; padding: 2px;">Sub-programs</p> <p style="font-size: small; color: blue;">Next page</p> </div> </div>			
<div style="border: 1px solid purple; padding: 5px; margin-bottom: 5px;">Necessity of creating sub-centers</div> <div style="border: 1px solid purple; padding: 5px; margin-bottom: 5px;">Insufficiency in competitive functions in GMS</div> <div style="border: 1px solid purple; padding: 5px; margin-bottom: 5px;">Expansion of urban area without control</div> <div style="border: 1px solid purple; padding: 5px; margin-bottom: 5px;">Land speculation without control</div> <div style="border: 1px solid purple; padding: 5px; margin-bottom: 5px;">Insufficient industrial and logistic functions</div> <div style="border: 1px solid purple; padding: 5px; margin-bottom: 5px;">Requires development of urban infrastructure</div> <div style="border: 1px solid purple; padding: 5px;">Needs an improvement of living environment in new urbanizing area</div>	<div style="border: 1px solid green; padding: 5px; margin-bottom: 5px;">Clarification of characteristics, land use, specific functions</div> <div style="border: 1px solid green; padding: 5px; margin-bottom: 5px;">Investment promotion, development inducement and PPP acceleration</div> <div style="border: 1px solid green; padding: 5px; margin-bottom: 5px;">Development of an industrial estate and a logistics park</div> <div style="border: 1px solid green; padding: 5px; margin-bottom: 5px;">Relocation of public facilities</div> <div style="border: 1px solid green; padding: 5px;">Development of infrastructure for each sub-center</div>		<div style="border: 1px solid blue; padding: 5px; margin-bottom: 5px;">S1 Investment Promotion</div> <div style="border: 1px solid blue; padding: 5px; margin-bottom: 5px;">S2 Sub-centers' Core Area Development</div> <div style="border: 1px solid blue; padding: 5px;">S3 Infrastructure Development</div>

Sub-centers, located outside the urban center, are conceptually exceptional area in terms of urban development, and are developed to accommodate certain urban functions from the existing urban center or to receive new urban functions from urban areas such as KM21, Thanaleang, Dongdock, Naxaithong and proposed Railway town, which will accommodate about 315,000 persons in 2030.

The zone basically consists of new business, commercial and residential areas, and is basically self-sufficient with balanced working place and living place within it. Considering the existing limited utilities, public facilities and infrastructure at present in the sub-centre, it is necessary to develop all infrastructures including ICT development and to relocate public facilities in the beginning..

The business and commercial areas in this zone should be developed with higher land intensity. For the promotion of business and commercial activities, investment promotion and PPP acceleration should take into account. Additionally, development of an industrial estate and a logistics park is required to form sub-centers' core function.

Basically the development should be permitted only in the sub-centers with the prohibition of any urban development outside of sub-centre. This will facilitate in conserving good natural environment and creating good living environment.

Thus, following the urban development policies, the following sub-programs and projects as listed and summarized below were identified for Sub-centre Zone:


Table 5.2.4: List of Sub-programs and Projects for Sub-center Zone

Sub-program		Project	
S1	Investment Promotion Sub-program	S1-1	Sub-center SEZ Development Project
		S1-2	PPP Acceleration Project
S2	Sub-centers' Core Area Development Sub-program	S2-1	KM21 VIP Development Project
		S2-2	Thanaleang VLP Development Project
		S2-3	Relocation of Higher Education Institutes Project to Dongdock
		S2-4	Commercial Complex Development Project at Naxaithong
		S2-5	Vientiane Central Station Development Project
S3	Infrastructure Development Sub-program	S3-1	Infrastructure and Sanitation Development Project
		S3-2	Secondary Roads Improvement Project
		S3-3	ICT Infrastructure Strengthening Project
		S3-4	New Public Park Construction Project

Source: JST

(5) Sub-programs and Projects for Urban Cluster Zone

In Urban cluster, the following urban development policy should be taken into account:

Urban Cluster Zone			
Location	Small-scale urbanized areas separately located outside the “Core Urban Area”	Zone Area	3,080 ha
Main Building Use	Houses, Roadside stores, Agriculture-related buildings	Population 2030	35,000 persons
		Density 2030	11 pop/ha
Landscape			
Problems/Constraints - Policy- Sub-programs			
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> <p>Problems and Constraints <i>Chap.2.5</i></p> <div style="border: 1px solid purple; padding: 5px; margin-bottom: 5px;">Necessity of creating urban clusters</div> <div style="border: 1px solid purple; padding: 5px; margin-bottom: 5px;">Inefficiency of public functions in rural area</div> <div style="border: 1px solid purple; padding: 5px; margin-bottom: 5px;">Expansion of urban area without control</div> <div style="border: 1px solid purple; padding: 5px; margin-bottom: 5px;">Losing higher productive agricultural land</div> <div style="border: 1px solid purple; padding: 5px; margin-bottom: 5px;">Needs an improvement of agricultural markets</div> <div style="border: 1px solid purple; padding: 5px;">Needs development of urban infrastructure and utility</div> </div> <div style="text-align: center;"> <p>Urban Development Policies <i>Chap.3.4</i></p> <div style="border: 1px solid green; padding: 5px; margin-bottom: 10px;">Improvement of urban clusters’ and local public service</div> <div style="border: 1px solid green; padding: 5px;">Development of agriculture and green tourism center</div> </div> <div style="text-align: center;"> <p>Sub-programs <i>Next page</i></p> <div style="border: 1px solid blue; padding: 5px; margin-bottom: 10px;">C1 Local Public Service Improvement</div> <div style="border: 1px solid blue; padding: 5px; margin-bottom: 10px;">C2 Agricultural Center Development</div> <div style="border: 1px solid blue; padding: 5px;">C3 Green Tourism Center Development</div> </div> </div>			

The Urban Clusters are located in the area with good accessibility of river and road transport. These areas have a potential for economic development to be trade and logistics center of the rural districts i.e. Tha Ngon, Khok Hae and Ban Pao as proposed.

Conceptually, urban cluster is remote area of Vientiane Capital, which has been developed to form local economic and service center for surrounding villages and to distribute certain population from the urban center. The estimated population in 2030 is limited and will be about 35,000 persons.

In order to develop the urban clusters good living environmental conditions, firstly, the local public service such as health care, education and other administrative services which are concentrated at urban clusters should be improved. Secondly, the infrastructure needs to be improved. Currently, urban clusters have very limited utility and infrastructure services. .

Development of agriculture green tourism center and commercial centre is also required for the improvement of a local trade and promotion of agricultural products.

Thus, following the urban development policies, the following sub-programs and projects as listed and summarized below were identified for Urban Cluster Zone:

Table 5.2.5: List of Sub-programs and Projects for Urban Cluster Zone

Sub-program		Project	
C1	Local Public Service Improvement Sub-Program	C1-1	Community Center Development Project
C2	Agricultural Center Development Sub-program	C2-1	Agricultural Center Development Project
		C2-2	Road side station Development Project
C3	Green Tourism Center Development Sub-program	C3-1	Green Tourism Development Project
		C3-2	Local Border Market Development Project

Source: JST

5.2.3 Long List of the Projects

The Table 5.2.6 describes the long list of identified and proposed projects with further details. These projects need to be implemented over the planning horizon up to 2030 by the Laotian side. Additionally, in terms of implementation period, the projects were categorized into three terms, which are 1) short-term in the next five years, 2) middle-term in the next ten years, and 3) long-term in the next twenty years.

Table 5.2.6: Long List of the Projects

No.	Sub-program	No.	Project	Scope etc.	Schedule			Implementation Organization
					Short	Mid	Long	
Historic Conservation Zone								
H1	Historic Heritage Conservation Sub-program	H1-1	National Heritage Registration Project	1) Public hearing of identified urban heritages to register them as local level heritage 2) Registration of Local Level of National Heritage with control/subsidy system 3) To support restoration and infill development of registered local level heritages				DIC, MIC, DHUP, DPWT, MPWT
		H1-2	Historic Landscape Conservation Sub-Zoning Project for Surroundings of Heritages	1) Formulation of Historical Urban Landscape Conservation Sub-Zoning/Guideline 2) Legislation of Conservation Sub-Zoning with guideline and subsidy 3) Execution of Conservation Guidelines for Building Application				DIC, MIC, DHUP, DPWT, MPWT
H2	Heritage Tourism Development Sub-program	H2-1	Heritage Tourism Development Project	1) To identify Potential Tourism Resources to create international tourism destination 2) Tourism Development Direction and community based Tourism Product Development 3) Formulation of Heritage Tourism Development Plan (including institution/ organization, marketing/promotion, event program etc.)				National Tourism Authority, DHUP, DPWT, MPWT, OPWT
		H2-2	Community Base Tourism Road Development Project	1) Selection of (a) street(s) to develop (a) community road(s) as a model case 2) Improvement of sidewalks, Road beautification by setting street furniture and trees 3) Promotion of controlling building façade and design				National Tourism Authority, DHUP, DPWT, MPWT
		H2-3	Tourism Promotion	1) Formulation of action program for strategic market development and promotion				National Tourism

			Project	2) Development of International Heritage Tourism Promotion Materials (brochure, leaflet, guide map, website, tourist guide/info boards) 3) Organization of familiarization tours (travel writer/agents/etc), promotion events, beautification campaigns, etc				Authority, DPWT, DIC
H3	Environment Improvement Sub-program	H3-1	Drainage Improvement Project	1) Capacity expansion of drainage system 2) Improvement of open ditch				MPWT, VUDAA
		H3-2	Sewerage System Construction Project	1) Construction of treatment plant 2) Development of sewerage pipeline 3) Introduction to wastewater treatment fee structure with public awareness program				MPWT, VUDAA
		H3-3	Solid Waste Disposal Improvement Project	1) Community awareness campaign for sanitary solid waste discharge 2) Construction of community collection points 3) Beautification of garbage bin and around the collection points				VUDAA, VSWCS
		H3-4	Park Large-Trees Planting Project	1) Planting large trees in Regent Park (Fa Ngum Square) and Nampu Park 2) Improvement of shade spaces in Riverside Park and 555 Park				VUDAA, DIC, DPWT
H4	Urban Transport Improvement Sub-program	H4-1	Primary Roads Improvement Project	1) Improvement and completion of NR 13 2) Improvement and completion of NR 1				PTI, MPWT
		H4-2	Secondary Roads Improvement Project	1) Improvement and completion of secondary roads connecting to the primary roads				PTI, MPWT
		H4-3	Public Transport Improvement Project	1) Formulation of a Traffic Management Plan 2) Introduction of route bus and park & ride system 3) Development of Car Parking				PTI, DPWT, MPWT, VUDAA
		H4-4	BRT Development Project	1) Feasibility Study for introduction of BRT 2) Capacity development for BRT planning, design and operation				PTI, DPWT, MPWT, VUDAA

				3) Introduction of BRT system on existing bus routes				
H5	Landscape and Land use Improvement Sub-program	H5-1	Building Control Regulations Refinement Project	1) Refinement of existing building construction permit system 2) Improvement in institutional system, regulation and capacity development 3) Promotion of local community agreement for building control				DHUP, DPWT, MPWT, OPWT
		H5-2	Public Facility Relocation Project	1) Promotion for relocation of governmental offices and colleges to outer zones 2) Vitalization of Historic Conservation Area by converting the vacant sites into new public facilities with more attractiveness				Public Organizations, etc.
Inner Urban Zone								
I1	Business Area's Land Use Intensification Sub-program	I1-1	ICT Infrastructure Strengthening Project	1) Development and concentration of ICT infrastructure in a business area 2) Promotion of strengthening highly ICT area				MPWT, MOIC
		I1-2	Urban Redevelopment Acceleration Project	1) Strengthening infrastructure development 2) Inducement and concentration of business and commercial land use 3) Promotion of reconstruction of high-rise buildings in specific areas				MPWT, DPWT, MOIC
		H1-3	Public Facility Relocation Project	1) Promotion for relocation of colleges to outer zones 2) Vitalization of Inner Urban Zone by converting the vacant sites into new public facilities with more attractiveness				Public Organizations, etc.
I2	Living Environment Improvement Sub-program	I2-1	Water Infrastructure Improvement Project	1) Development of urgent water supply facilities such as expansion of WTP and extension of pipeline 2) Implementation of urgent wastewater system and management of water sources reported with high pollution. 3) Development of drainage pump system and network system				MPWT, DPWT, NPVC, VUDAA

		I2-2	Solid Waste Disposal Improvement Project	1) Community awareness campaign for sanitary solid waste discharge 2) Construction of community collection points 3) Development of collector road to access to secondary roads				VUDAA, VSWCS
I3	Inner Urban Road Network Improvement Sub-program	I3-1	Primary Roads Improvement Project	1) Improvement and completion of NR 13 2) Improvement and completion of NR 1 3) Improvement and completion of Inner ring road				PTI, MPWT
		I3-2	Secondary Roads Improvement Project	1) Improvement and completion of secondary roads connecting to the primary roads				PTI, MPWT
		I3-3	Streetscape Improvement Project	1) Beautification and tree planting on NR 13 and North to the airport 2) Improvement in ornamental streetscape of Lane Xang Avenue (coordinate with BRT) 3) Beautification and Improvement of 23 Singha Road				PTI, MPWT
I4	Public Transport Improvement Sub-program	I4-1	Public Transport Improvement Project	1) Formulation of a Traffic Management Plan 2) Introduction of Route bus and park & ride system 3) Development of Car Parking				PTI, DPWT, MPWT, VUDAA
		I4-2	BRT Development Project	1) Feasibility Study for introduction of BRT 2) Capacity development for BRT planning, design and operation 3) Introduction of BRT system in existing bus routes				PTI, DPWT, MPWT, VUDAA
I5	Marshes Conservation and Park Improvement Sub-program	I5-1	Nong Douang Ecological Marsh Park Construction Project	1) Conservation of Nong Douang marsh as a reservoir 2) Providing park equipment (benches, small arbors, toilets, lightings, signboards, etc.)				DPWT, VUDAA
		I5-2	Nong Chan Ecological Marsh Park Construction Project	1) Conservation of Nong Chang marsh as a recover and planting large trees around the marsh 2) Construction of pedestrians' wood deck and a small bridge across the marsh 3) Providing park equipment (benches, small arbors, toilets, lightings, signboards, etc.)				DPWT, VUDAA

		I5-3	Existing Marsh Conservation Project	1) Conduct survey and feasibility study of existing marshes 2) Conservation of marshes as a reservoir 3) Providing park equipment around the marshes				DPWT, VUDAA
		I5-4	Park Large-Trees Planting Project	1) Planting large trees in Patuxay Park and 23 Singha Park 2) Planting large trees in some Parks around That Luang Area				VUDAA, DIC, DPWT
Outer Urban Zone								
O1	New Urbanizing Area Development Sub-program	O1-1	Nong Ping Area Development Project	1) Conduct detail planning in Nong Ping area 2) Land reclamation and infrastructure development 3) Construction and promotion of residential, business and commercial lands				DPWT
		O1-2	New Residential Area Development Project	1) Conduct detail planning in target areas 2) Land reclamation and infrastructure development 3) Promotion of residential lands				DPWT
O2	Living Environment Improvement for Residential Area Sub-program	O2-1	Water Infrastructure Improvement Project	1) Development of urgent water supply facilities such as expansion of WTP and extension of pipelines 2) Implementation of urgent wastewater network and management of water sources reported with high pollution. 3) Development of drainage pump and network system				MPWT, DPWT, NPVC, VUDAA
		O2-2	Solid Waste Disposal Improvement Project	1) Community awareness campaign for sanitary solid waste discharge 2) Construction of community collection points 3) Development of collector road to access to secondary roads 4) Expansion of KM7 maintenance shop/ transfer point				VUDAA, VSWCS
O3	Water-front Conservation and Park	O3-1	Large-scale Marshes Conservation Project	1) Conservation of That Luang Marsh, Nong Ping Marsh and Nong Tha Marsh in NE zones as per land use regulation scheme 2) Control of construction and development to be in harmony with the natural environment				DAF, DPWT, MPWT, PTI

	Improvement Sub-program	O3-2	River-front Improvement Project	1) Improvement of the Hong Ke and Mak Hiao River with natural trail 2) Improvement of the Hong Xeng and Hong Pasak River with natural trail				MPWT, DPWT
		O3-3	New Public Park Construction Project	1) Construction of District Park for new urbanizing areas 2) Construction of Pocket Parks for new urbanizing areas 3) Capacity and institutional development for maintenance of the public parks				DPWT, VUDAA, OPWT
O4	Road Network Improvement Sub-program	O4-1	Primary Roads Improvement Project	1) Improvement and completion of NR 13 2) Improvement and completion of NR 1 3) Improvement and completion of Inner ring road				PTI, MPWT
		O4-2	Secondary Roads Improvement Project	1) Improvement and completion of secondary roads connecting to the primary roads				PTI, MPWT
O5	Public Transport Improvement Sub-program	O5-1	Public Transport Improvement Project	1) Formulation of a Traffic Management Plan 2) Introduction of Route bus and park & ride system				PTI, DPWT, MPWT, VUDAA
		O5-2	Railway Extension Project	1) Extension of railway from Thanaleang to Vientiane station 2) Construction of Vientiane station 3) Improvement of Thanaleang station				PTI, MPWT
Sub-center Zone								
S1	Investment Promotion Sub-program	S1-1	Sub-center SEZ Development Project	1) Development and operation of SEZ scheme 2) Designation of SEZ 3) Deregulation of real estate development and investment				DPWT, Vientiane Capital
		S1-2	PPP Acceleration Project	1) Development of PPP scheme to accelerate development. 2) Promotion of private finance and development				DPWT, Vientiane Capital
S2	Sub-centers' Core Area Development	S2-1	KM21 VIP Development Project	1) Construction of Vientiane Industrial Park (Phase-1) 2) Operation and management of the park 3) Promotion of enterprise tenants				MOIC
		S2-2	Thanaleang VLP	1) Construction of Vientiane Logistics Parks				MPWT

	Sub-program		Development Project	2) Operation of the park and promotion for fully utilizing the interpositional transport 3) Promotion of import and export through the VLP				
		S2-3	Relocation of Higher Education Institutes Project to Dongdock	1) Promotion of removal educational offices from city center 2) Development of educational and ICT infrastructure				DPWT
		S2-4	Commercial Complex Development Project at Naxaithong	1) Development of infrastructure 2) Promotion of commercial land use				DPWT
		S2-5	Vientiane Central Station Development Project	1) Extension of railway from Thanaleang to Vientiane station 2) Development of new station infrastructure 3) Promotion of commercial and business land use				Lao National Railway Authority
S3	Infrastructure Development Sub-program	S3-1	Secondary Roads Improvement Project	1) Construction of key sub-arterial roads in sub-centers				DPWT
		S3-2	Infrastructure and Sanitation Development Project	1) Construction of main water supply pipe under the road constructed by S3-1 2) Construction of main sewerage pipe under the road 3) Development of main drainage pipe under the road				DPWT
		S3-3	ICT Infrastructure Strengthening Project	1) Development of ICT infrastructure in sub-centers				DPWT
		S3-4	New Public Park Construction Project	1) Construction of District Park for new urbanizing areas 2) Construction of Pocket Parks for new urbanizing areas 3) Capacity and institutional development for maintenance of the public parks				DPWT, VUDAA, OPWT
Urban Cluster Zone								
C1	Local Public	C1-1	Community Center	1) Centralization and development of Public office, bank,				DPWT, OPWT

	Service Improvement Sub-Program		Development Project	clinic, kindergarten, IT center etc. 2) Implementation of water supply facilities such as WTP and pipeline				
C2	Agricultural Center Development Sub-program	C2-1	Agricultural Center Development Project	1) Tha Ngon (Xaythany District) 2) Khok Hae (Sangthong District) 3) Ban Pao (Mayparkngum District)				MAF, OAF, OPWT
		C2-2	Road side station Development Project	1) Tha Ngon (Xaythany District) 2) Khok Hae (Sangthong District) 3) Ban Pao (Mayparkngum District)				MAF, OAF, OPWT
C3	Green Tourism Development Sub-program	C3-1	Green Tourism Center Development Project	1) Tha Ngon (Xaythany District) 2) Bang Pao (Mayparkngum District)				MIC, MAF
		C3-2	Local Border Market Development Project	1) Khok Hae (Sangthong District)				MIC, MAF
C4	Landfill Site Development Sub-program	C4-1	KM32 Landfill Site Improvement Project	1) Improvement of operational system in KM32 landfill site 2) Expansion of landfill pits in existing site				SWMDS, VUDAA
		C4-2	Septage Sludge Treatment Improvement Project	1) Improvement of centralized seepage sludge treatment system in the solid waste landfill for improved hygiene condition				MPWT, VUDAA
		C4-3	New Landfill Site Development Project	1) Construction of new landfill pits and relocation of the office and equipment				SWMDS, VUDAA
General								
G1	Development of Regulations and Management	G1-1	Improvement of Water Supply Management	Improving the water supply management by the local organizations themselves with project cycle management, especially for improving financial condition and leakage ratio according to the reviewed master plan.				MPWT, DPWT, NPVC
		G1-2	Development of	Preparation of guideline to public in general installation				MPWT, VUDAA,

Systems Sub-program		Guideline in Wastewater Treatment Operation, Maintenance and Monitoring with Treatment Fee Structure	of wastewater treatment plant with operation, maintenance and monitoring for various levels such as household, developer and government officer with integration of awareness program in wastewater management to public according to the reviewed master plan.				NPVC
	G1-3	Improvement of Drainage System	Improvement of drainage system including drainages, pump stations and water gates system together with flood protection banc according to the reviewed master plan.				MPWT, VUDAA
	G1-4	Formulation of solid waste management guideline	Domestic and industrial solid waste management guidelines shall be formulated describing the classifications of waste, definitions of the types of waste, standards and clarification of responsible parties and their activities for the sanitary solid waste management. They shall be officially acknowledged as per the regulations or VC's ordinances				WREA, MOH, VC, with VUDAA, Donors
	G1-5	Legislation of solid waste management laws	Industrial and hazardous waste management laws shall be legislated before VIP and VLP start operations. In addition to the laws, monitoring framework and penalties shall be provided to tighten control on inappropriate waste management practices and activities				WREA, MOH, VC
	G1-6	Formulation of Administrative Direction for Making Green Spaces in Development Projects	For the development of an area of more than 20 ha, it is proposed that the development activity should meet the requirement of maintaining the green space coverage ratio in the site. To enforce this, administrative direction system need to be formulated.				DHUP, DPWT
	G1-7	Formulation of Public Park Construction and	Public parks which are categorized into 2 types should be developed according to their sizes and functions in new urbanizing areas. Based on an idea of attracting people from the distance to use public parks, standards and				DPWT, OPWT, VUDDA, MIC

			Management Standards and Guidelines	guideline for construction and management are required.			
		G1-8	Formulation and legislation of Urban Landscape Zoning and Guideline	To prepare urban landscape zoning and seek a Parliamentary Approval to legislate and enact zoning. (Urban Landscape Guideline will be a part of land use zoning control) - Historic Landscape Zone - Traditional Garden City Zone - Modern Landscape Zone - Rural Landscape Zone - Forest Landscape Zone etc.			PTI, DPWT
G2	Capacity and Institutional Development Sub-program	G2-1	Capacity Development on BRT Design and Operation (Specific) or on Transportation Planning (General)	Capacity development of the concerned staff for transit oriented transportation i.e. BRT for planning, design and its operation.			PTI, DPWT, MPWT
		G2-2	Capacity Development on Water Supply Management	Capacity development of the local staff along with public awareness program about the soft and hard component of water supply management.			MPWT, DPWT, NPVC
		G2-3	Establishment of Institution and Capacity Development on Wastewater Management	1) Establishment of organization for wastewater management 2) Institutional & capacity development of local staff about the soft and hard component for waste water management. Also about expanding capacity for the laboratory analysis of wastewater quality.			MPWT, VUDAA, NPVC, WREA
		G2-4	Capacity and Institution	Institutional & capacity development of local staff about the soft and hard component related to planning,			MPWT, VUDAA

		Development on Drainage System	operation and maintenance of drainage system.				
	G2-5	Community Awareness Campaign for Sanitary Solid Waste Discharge	In the built-up area, an awareness campaign on domestic solid waste management shall be conducted to enlighten local residents about the importance of solid waste collection and maintaining sanitary living environment.				VUDAA
	G2-6	Community Awareness Campaign and Environmental Education Project	The awareness campaign for environmental education shall be continuously conducted targeting new urban areas: the Sub-centers & Outer urban zone, Outskirts zone, Urban clusters.				VUDAA
	G2-7	Improvements of Institution and Equipment in VSWCS	VSWCS must deal with large part of waste collection as well as the privatization. The privatization which VUDAA promotes is a key factor for the expansion of solid waste management. The waste collection is an essential public service which can maintain sanitary urban environment and any service suspension would result in serious adverse impacts on urban activities. Therefore, VSWCS should cover less accessible areas as a public service to avoid high dependency on the privatization for the waste collection.				VSWCS, VUDAA
	G2-8	Capacity Development on Administrative Direction for Making Green Spaces in Development Project Sites	To enforce administrative directions, capacity development of staffs such as DHUP is necessary.				DHUP, DPWT, OPWT, VUDDA
	G2-9	Capacity Development	For the development and management of attractive				DPWT, OPWT,

			for Public Parks Management	public parks, capacity development of staffs such as in VUDAA and OPWT is necessary.				VUDDA
	G2-10		Capacity Development Project on Greenery Improvement with Private Sector	To improve greenery with private sector in urbanized area, capacity development of staffs such as in DHUP is necessary. In addition, guidelines for improving greenery are also required.				DPWT, VUDDA, DHUP, MIC
	G2-11		Capacity Development for Urban Landscape Management	To develop the capacity for the formulation/enforcement/ monitoring of Urban Landscape to be applied for building application				DHUP, DPWT
	G2-12		Community Awareness and Agreement Campaign for Urban Landscape Improvement	To promote community agreement about the buildings located along roads for building façade, billboard, set-backline and landscape in set-back area.				DHUP, DPWT

Note: Schedule S: Short (-2015), M: Middle (-2020) and L: Long (-2030)
Source: JST

5.3 Framework for Implementation

5.3.1 Urban Development Management Governance of Lao PDR

Effective and sustainable implementation and management of urban development will be realized only through good cooperation amongst various functional organizations, strategically designed legal framework and well coordinated human resource development. Problems and constraints have been identified through the analysis related to organizations, legal framework and human resource in Chapter 2 and Appendix 1. Each aspect could have its own solution and relevant capacity development plan. However, with the present situation of despite high educational background of Lao officials of the central government in charge of development planning and construction, inconsistency and uncooperative working situation persists. It is thus a time to set up the concept of Urban Development Management Governance of Lao PDR which should be a base of all policy and measures for development planning and construction. Issues of organization, legal framework and human resource should be considered to be solved along this governance concept.

The concept of Urban Development Management Governance consists of three (3) main measures, which are;

(1) Systematically organized laws and regulations

Legal Framework is the base and starting point of for all public and private sectors involved in construction and development. It is not only the guideline, but also clarification of criteria of responsibility for each sector.

(2) Fair and unyielding enforcement & monitoring based on Building Confirmation System

It is an administration system to inspect and assure if the construction plan conforms to Building Code and other related regulations to ensure quality and safety of buildings and structures to stimulate formulation of sound and appropriate urban growth and development. Also “Building Permission” is included in this system which is an exception measure to give the permission to the construction and development plan which contradicts Building Code, other related regulations and superior plans.

This system must be consistent in terms of its contents and enforcement. The office and officer of building confirmation should be clearly set up and aware in public. Therefore study seminar and formulation of manual for private construction companies will be indispensable as well as of building code. Also Public awareness activity is important of this system to lead accountability. Town Building Platform can be utilized for this.

(3) Accountability

Accountability is responsibility for one’s decisions and actions and obligation to explain them when inquired. Regarding to public urban development management, both public and private sector owe accountability to the public. It will be realized by License system of Architect and Engineer.

The purpose of license system is

- to improve the technical level,
- to stabilize the high standard of technical level,

- to disseminate the sense of accountability, and
- to establish the public awareness about accountability.



Source: JST

Figure 5.3.1: Concept of Urban Development Management Governance

These three (3) measures are assured by good linkage of three (3) categories, which are;

- good cooperation of functional Organization,
- strategically designed Legal Framework, and
- well coordinated Human Resource Development.

Legal framework for urban development management should consist of systematically organized Building Standard and Grouping Regulations for urban development management. Fair and unyielding enforcement and monitoring shall be guaranteed by concrete and insistent building confirmation system. Accountability will be realized by License system of Architect and Engineer authorized by Lao Government and well organized public participation system.

5.3.2 Organizational Strategy

(1) Relationship and Cooperation System among Related Organizations

A major issue regarding the organizational system has been identified as below.

- No continuous coordination between relevant organizations. Therefore, many organizations are managing and dealing with same tasks without well cooperating among the relevant organizations

To analyze the ideal relationship and cooperation system among related organizations, duty and role of each organization should be analyzed from the view point of urban development and management. Table 5.3.1 shows duty and role of each organization stipulated in laws and decrees according to the stage of urban development management, which are “Policy Making”, “Planning and Research”, “Implementation”, and “Monitoring”.

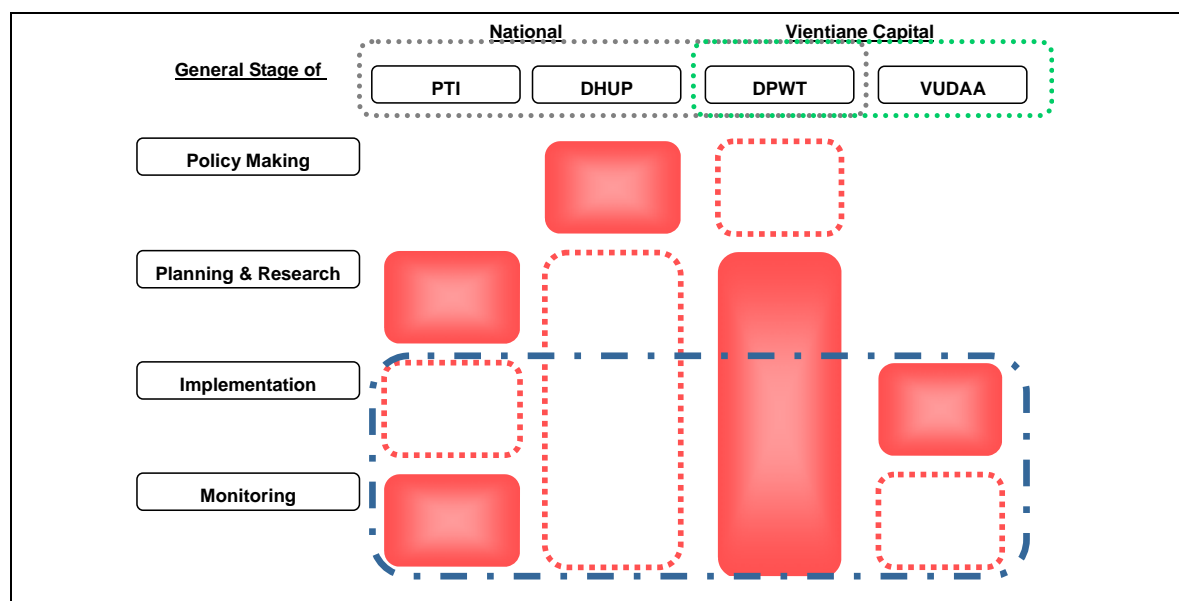
Table 5.3.1: Duty and Role of Four (4) Major Organizations according to the Stage of Urban Development Management

General Stage of Urban Development Management	National		Vientiane Capital	
	PTI	DHUP	DPWT - OPWT	VUDAA
1. Policy Making		- To turn the guidelines, policies of the party and government on the housing work, urban planning, urban development and water supply into the strategic plan, work plan, plan and the project in each period and to lead the implementation to be resulted and high quality.		
2. Planning & Research	<ul style="list-style-type: none"> - Survey, map drawing and mark the protected areas - Study and plan the urban engineering such as urban road network, rain drainage system - Collect and create data center to facilitate the research, analysis of data collected from the field and file the documents of sector -Plan the urban planning for all levels in accordance with the Urban Law such as : national urban planning, regional urban planning, provincial urban planning and district urban planning - Study, plan and design the infrastructure and transport work 	<ul style="list-style-type: none"> - To analyze, draft the provision, regulation, law and technical standard on the housing work, urban planning, urban development and water supply. - To collect and control the data, information and statistic of its own sector. - To analyze, support the invention notion and the utilization of the progress of suitable technology into its own sector. 	<ul style="list-style-type: none"> - short, medium and long planning on public works and transport development in province ,capital under agreement of provincial governor , capital governor and submit to minister of MPWT for consideration. 	<ul style="list-style-type: none"> - Plan, implement, management and monitoring the development district.

<p>3. Implementation</p>	<ul style="list-style-type: none"> - Regularly participate the in discussing with other sectors in the public works and transport institute in order to implement the projects 	<ul style="list-style-type: none"> - To analyze, search for the fund resource both domestic and overseas in order to improve and expand its own sector. - To set up the plan, control and efficiently utilize the budget arranged by the government. - To control the work of residential development, survey and design and housing construction, Lao architecture protection and promote the utilization of the domestic construction To control and develop the urban basic infrastructure and environment; support, promote the garbage management and sewage in the urban area. - To control the work of development of water supply system in the districts in various levels; support and efficiently promote the service and utilization of the water supply infrastructure. 	<ul style="list-style-type: none"> - Manage to the construction, maintenance and repair the road (by land), by water, airport and riverside protection in province, capital as assignment of the minister of MPWT. - Manage the transportation by land, by water, port belong to province, capital. - Manage the transportation vehicle, construction equipment, driving school, technical inspection center, examination and issuance of driving license in province, capital. - Manage the technical system for safety and traffic discipline on the road (by land) by water in its responsibility area. -Manage of housing, building construction; urban planning and water supply, excavation and production of construction material belong to its responsibility. - Manage and protect public place, clean, environment, preserve and promote ethnic group architecture in province, capital. - Implementation of resolution, decree, decision, declaration, technical-economic notice and regulation issued by ministry and government as well. -Mange, train construct, contain, reshuffle, remove, educate, flatter and act as staff policy, follow to party and government policy coordinated with ministry and provincial administration, capital. - Manage of engineer units of department and manage of business unit of public and private sector belong to its responsibility. 	<ul style="list-style-type: none"> - Plan, implement, management and monitoring the development district. - Construct, improve and repair the infrastructure and the service in the urban that will include; Road, Drainage, Keep and eliminate the garbage, Protect the landslide of bank and protect the flooding, Clean and Keep the environment, The light for public, Park. - Manage and control the implementation of construction work and other development in the scope of AUDAA that are defined by cooperation with the concerned sectors.
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Source : Decree of the Prime Minister No. 373/PMO, dated 22 October 2007, on the organization of Ministry of Public Works and Transportation, Decree on the implementation and activities of Urban Development Administration Authority of Vientiane Capital, 23rd February, 1997, Decree of the Prime Minister No. 595/PTI Public Works and Transportation Institute, 12th May, 2009, JST

From Table 5.3.1, main roles of four (4) organizations on various stages of urban development management are summarized in Figure 5.3.2. PTI has its main duty and role in “Planning and Research” and “Monitoring” and little commitment on “implementation”. DHUP has its duty and role in the all of four (4) stages overall, though the main tasks are of policy making and supervising. DPWT has its duty and role on broader stages, which is “Planning and Research” to “Monitoring”. DPWT has its main task in “Planning and Research” and “Monitoring”. On the other hand, OPWT has its main task in “Implementation” and “Monitoring” on site of each District. VUDAA is more geared to “Implementation” and slightly to “Monitoring”. In the Study especially the part of “Implementation” and “Monitoring” should be considered in terms of urban development implementation and management.

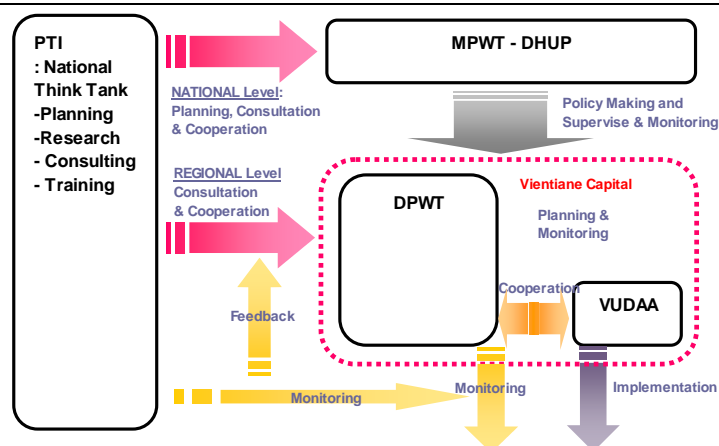


Source: JST

Figure 5.3.2: Comparative Roles of Four (4) Major Organizations according to their Mandate

According to this comparative roles analysis based on the present laws and decrees, there are fairly clear demarcation of duties and roles among these organizations in terms of urban development management as below. Therefore the core cause of the issue of organizational system is laid mainly on coordination system between relevant organizations.

- PTI should be a national Think Tank for planning and research, consultation and monitoring.
- DHUP should play the role of Policy Maker to set the goal and prepare fundamental plans and to supervise the overall process.
- DPWT should be in charge of detail planning and review the result of monitoring from OPWT and feed back to planning, implementation and management.
- OPWT is the frontline of implementation and management. Their role is to implement the plan on site and to guide private construction companies accordingly. On this token, another important duty of OPWT is monitoring. This monitoring results of OPWT will be fed back to DPWT and PTI and be the base of improved plans and implementation.
- VUDAA is a public service company as stated in Table 5.3.1 Organization Strategy. Therefore the duty will be in implantation, management and monitoring in a certain sectors.



Source: JST

Figure 5.3.3: Ideal Relation and Cooperation System among Related Organizations

(2) Organization on Urban Planning (MPWT, PTI, and DPWT in Vientiane Capital)

Law on Urban Plan stipulates that MPWT (PTI) is responsible for preparation of urban master plans of level 1 cities, DPWTs are responsible for level 2 cities and OPWTs for level 3 cities. There are 140 cities in 17 provinces including Vientiane Capital in Lao PDR. Of this, 115 cities were provided with new or revised Urban Master Plans by different agencies between year 1992 and year 2007. However, more than 60 urban master plans which are 10 years or older have not been revised yet. Moreover, some district centers have not an urban master plan yet.

PTI had provided 82 Urban Master Plans during 10 years. An Urban Master Plan of Vientiane Capital, which had been provided by UNDP in 1991, had also been revised by PTI in 2001. Only 8 DPWTs had provided Urban Master Plans of level 3 city in 8 provinces.

Table 5.3.2: Situation of Provision of Urban Master Plan in Lao PDR between 1992 and 2007

Agencies responsible for preparation of Master Plan	Level of Cities (Districts)	No. of Cities (Districts)	No. of Master Plans provided by Agencies	Remarks
MPWT (PTI)	Level 1	4	82	Level 1: 4, Level 2:16, level 3:62
DPWT	Level 2	16	26	8 DPWTs (Provinces), Level 3:26
OPWT	Level 3	120	3	3 OPWT in 1 Province, Level 3: 3
Private Company			4	Level3: 4
Total		140	115	

Source: Urban Planning Manual

Thus, a main agency for provision of an Urban Master Plan was PTI, which is an agency that belongs to MPWT. However, local plans should be provided by responsibility of a local agency especially DPWT, not by a central agency (PTI) because of following points of view.

- Promotion of decentralization of administration
- Enhancement of local administration
- Implementation of urban management (planning, development, operation and maintenance) by a responsible local agency

PTI should be in essence an institute responsible for consultation to the central government and provincial governors for policy making for national and regional planning, for study and research on urban planning and for training for persons related to urban planning in public and private sector.

JST proposes main functions of each agency on urban planning shown in Table 5.3.3 and 5.3.4.

Table 5.3.3: Proposed Main Function of PTI on Urban Planning

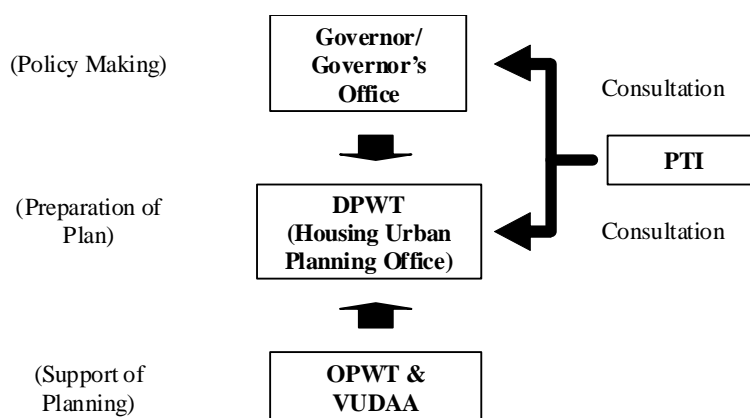
Main Function of PTI	
-	Consultation to the Minister on MPWT and Governors for policy making of National and Regional Urban Plan
-	Provision of National and Regional Urban Plan
-	Consultation to Provincial Governors for provision of Provincial and District Urban Plan
-	Consultation to DPWT for making Urban Plan
-	Study and Research on Urban Planning
-	Training for Persons related to Urban Planning in Public and Private Sector
-	Support of DHUP in MPWT

Source: JST

Table 5.3.4: Proposed Main Function of DPWT, OPWT and VUDAA on Urban Planning

DPWT	OPWT	VUDAA
- Advice to the governor for preparation of provincial and district urban plan in a province - Preparation of provincial and district urban plan in a province	- Support of DPWT for provision of district urban plan	- Support of DPWT for provision of district urban plan

Source: JST



Source: JST

Figure 5.3.4: Correlation with Each Organization on Urban Planning Phase

(3) Organization Responsible for Urban and Infrastructure Management in Vientiane Capital

DPWT, OPWT, and VUDAA are responsible for urban and infrastructure management (development, operation and maintenance) in Vientiane Capital. Duty of each agency and its organization on urban management in Vientiane Capital are shown in Table 5.3.5 below.

Duty and organization of each agency are almost same. OPWT covers areas managed by DPWT and VUDAA. Difference is that VUDAA has duties on planning, construction and improvement of solid waste management and related facilities and its unit with 55 staffs.

Vientiane Capital consists of 9 districts with 490 villages and total area of 3,920 km². Of which, DPWT manages 390 villages, which are mainly less urbanized, and area of 3,920 km². VUDAA manages 100 villages where have already been urbanized and area of 3,920 km².

Table 5.3 5: Duty and Organization of DPWT, OPWT and VUDAA in Vientiane Capital

Duty of Each Agency in Vientiane Capital		
DPWT	OPWT	VUDAA
Duty		
Maintenance of roads, water way, airport, and riverside protection Management of transport, traffic safety and sign, road and bridge construction, housing/building construction and monitoring, water supply, public places, environment	Data collection for Road Management, Housing Permission, Vehicle, etc Monitoring of Road Construction, Repair Shop Consulting of Construction and Maintenance of Road, Housing Permission, etc	Planning, Construction and Improvement of Infrastructure and within VUDAA Management Area Road, Drainage, Solid Waste Treatment , River Bank Protection, Cleaning of Road and Park, etc. Management and Monitoring of Development including Building
Organization		
Person. & Admin. Office	Person. & Admin. Unit	Person. & Admin. Section
Planning & Finance Office		Planning & Finance Section
Housing Urban Planning Office	Housing Urban Planning Unit	Housing Urban Planning Section
Road & Water way Office (including Bank Protection and River Bank Development Project Units)	Bridge & Road Unit	Bridge & Road Section
Transport Office	Transport & Urban Management Unit	Social & Urban Management Section
		Solid Waste and Urban Beautification Unit
Covers 390 of 490 villages in 5 Districts in V.C.	490 villages in 9 Districts in V.C.	Covers urbanized 100 villages in 4 Districts in V.C.
100 staffs in the head office	69 staffs in 9 District Offices	70 staffs in VUDAA

Source: Decision on DPWT, No: 9555/PWT, 16th/07/2009, Hearing to OPWTs, and Decree on the Implementation and Activities of Urban Development Administration Authority of Vientiane Capital

JST formulated an urban develop master plan in Vientiane Capital with the target year 2030. According to the master plan, urban area, urban population and population density increase from 220.7km², 570 thousand and 25.8 head/ha in year 2005 to 290.3km², 930 thousand and 32.0 head/ha in year 2030 respectively. In accordance with urban growth, volume of urban infrastructures managed by DPWT and VUDAA such as road, drainage, solid waste and park also increase.

Table 5.3.6: Transition of Urban Area and Population in Core Area of Vientiane Capital

Item	Unit	1995	2005	2009	2030
Urban Area	km ²	132.8	220.7	-	290.3
Urban Population	Head (,000)	331	570	-	930
Population Density	head/ha	24.9	25.8	-	32.0

Source: JST

Table 5.3.7: Increase of Development of Infrastructure related to DPWT & VUDAA

Item	Unit	Present to Future Condition
Length of Road	Km	739 in year 2010 to 835 in year 2030
Increase of Vehicle	'000. Car	329 in year 2010 to 844 in year 2030
Length of Drain	Km	Length of drain is increased because of expansion of urban area and road length.
Sewage Development		New 5 off-site sewage treatment plants are developed in urban area. (at present 0)
Solid Waste Generation	t/year	366,000 in year 2010 to 1,431,000 in year 2030 (Urban area, public & private)
Solid Waste Correction	t/year	76,000 in year 2010 to 785,000 in year 2030 (Urban area, public only)
Solid Waste Discharge	t/year	76,000 in year 2010 to 1,271,000 in year 2030 (Urban area, public & private)
Park	ha	20.6 in year 2010 to 400.0 in year 2030

Source: JST

The projected future urban area (290.3 km²) is expected to surpass the present management area of VUDAA. In case VUDAA will manage the future urban area of 290.3 km², the delineated villages and area managed by VUDAA has to be expanded. Moreover, management area of DPWT in Vientiane Capital will inevitably be smaller than present. It will complicate urban and infrastructure management in Vientiane Capital from the organizational and institutional point of view. This situation should be avoided. Consolidation and integration of present organizations especially DPWT and VUDAA in Vientiane Capital will be needed from following points of view.

- Strengthening of Capacity for Urban and Infrastructure Management
- Efficient Management of Urban and Infrastructure
- Simplification of Organization on Urban and Infrastructure Management

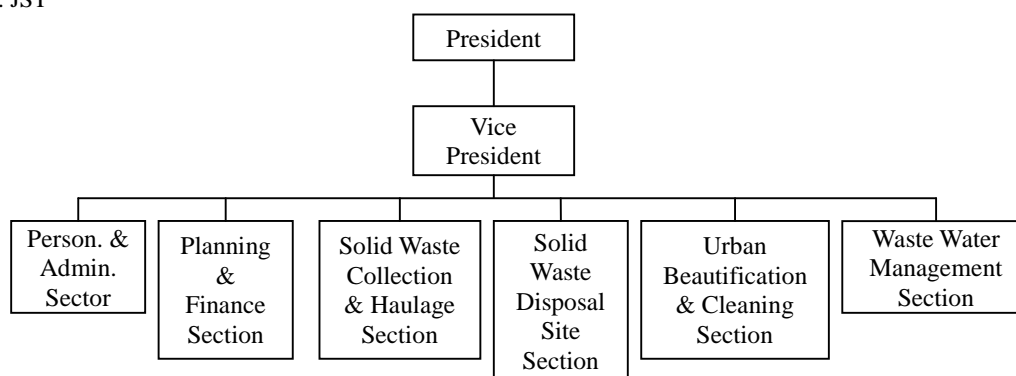
In this proposal, amongst the duties of VUDAA, solid waste management and urban beautification and cleaning will remain in VUDAA. Other duties such as housing, urban planning, bridge and road management and social and urban management will be transferred and consolidated to DPWT. Introduction of the centralized waste water treatment system in an urban area in Vientiane Capital is proposed and construction of five waste water treatment plants are proposed by JST. Waste water treatment facilities are expected to be managed (plan, operate and maintain) by a new organization set in VUDAA.

Table 5.3.8, Figure 5.3.5 and 5.3.6 show duties and organization of VUDAA and correlation with each authority on urban management in future.

Table 5.3.8: Proposed Main Duties of VUDAA

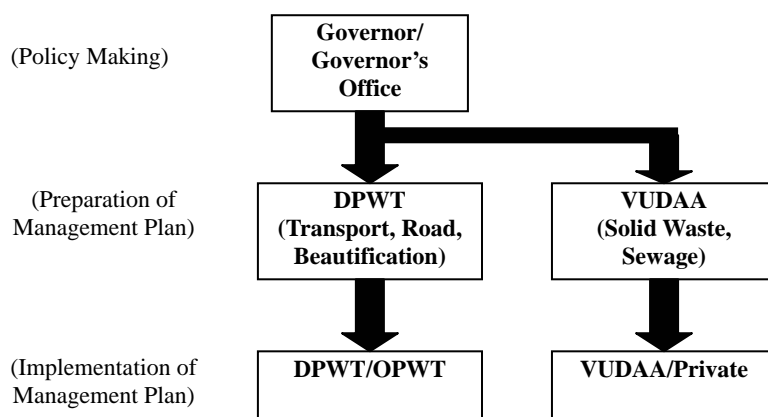
Main Duties of VUDAA
- Collection and Transportation of Solid Waste and Night Soil in Vientiane Capital
- Management of Solid Waste Disposal Site
- Cleaning of Public Place (Roads and Parks)
- Management of Waste Water Treatment Facility
- Study, Research and Planning on Solid Waste Management and Waste Water Management in Vientiane Capital
- Collection of Fee of Solid Waste Collection

Source: JST



Source: JST

Figure 5.3.5: Proposed Organization of VUDAA



Source: JST

Figure 5.3.6: Correlation with Each Authority on Urban Management Phase

5.3.3 Legal Framework Strategy

Regarding legal framework, two (2) general issues could be raised.

- The legislative structure of urban planning and management is unsystematic and incomplete.
- Laws and regulations are unclear, hard to understand and show difficulties to be implemented or impossible to be implemented.

MPWT, which is of immediate interest in the legal aspects regarding the management of construction and development, has been working to revise or formulate new. As most laws and regulations regarding the urban development planning and management have been formulated in the last 10 years, it is an appropriate time to review them with a viewpoint of an integrated legislative structure or legal framework for urban development planning and management as well as to review and revise each laws and regulations to be a clear and feasible enough to be implemented.

(1) Revision of Law on Urban Plan

1) Revision of Articles on Urban Planning Implementation Agencies at Provincial and District Level

Article 9 of Law on Urban Plan stipulates urban planning at the provincial level. It says that MPWT (PTI), in collaboration with concerned sectors and local administrations, is responsible for preparation of provincial urban plans. Article 10 mentions that MPWT (PTI), DPWT and OPWT are responsible for preparation of the urban plans for major cities belonging to central level, cities belonging to provinces and cities belonging to districts. Article 34, 35 and 36 also mentions on right and duties of MCTPC (MPWT), DCPTC (DPWT) and UDAA.

JST proposes, however, that MPWT or PTI should concentrate in preparing the urban plan of national and regional levels and DPWT should rather provide the urban plan of provincial and district level at 5.3.1. Therefore, Article 9, 10, 34, 35 and 36 should be revised properly.

Table 5.3.9: Articles, Titles and Contents in present Law on Urban Plan and its Amendment

Article	Title	Contents	Contents amended
Article 9	Urban Planning at the Provincial Level	MCTPC, in collaboration with concerned sectors and local administrations, is responsible for the study and design of the provincial plans	The provincial, municipal and special zone administrations are responsible for the study and design of the urban plans for cities belonging to the provinces, ...
Article 10	Urban Planning at the District Level	MCTPC, in collaboration with concerned sectors and provincial, municipal and special zone administrations, is responsible for the study and design of the urban plans for major cities belonging to the central level, The provincial, municipal and special zone administrations are responsible for the study and design of the urban plans for cities belonging to the provinces, ... The district administrations are responsible for the study and design of the urban plans of cities belonging to the districts, ...	
Article 34	Right & Duties of MCTPC	To determine strategic plans and design urban plans at national, regional and provincial levels for ...	To determine strategic plans and design urban plans at national and regional levels for ...
Article 35	Right & Duties of DCTPC	To design urban plans at city level for submission to the MCTPC.	To design urban plans at city level for submission to the MPWT and DPWT.
Article 36	Right & Duties of UDAA	To prepare implementation plans, to administer and inspect urban development activities;	To prepare implementation plans and development activities for solid waste management;
		To construct, restore and renovate city infrastructure, ...	To construct, restore and renovate infrastructure related to solid waste, ...
		To find resources for urban plans and development;	To find resources for plans and development related to solid waste;

Source: Law on Urban Plan

2) Revision of Articles on Allocation of Urban Land in the Urban Plan

Table 5.3.10 below shows land use zone mentioned and used in the Law, Order and the Master Plans at present.

In all 4 zones (UA, UB, UC and UD) are stipulated in Article 13, 14, 15, 16 and 17 in the Law on Urban Plan. Ministerial Order on Urban Planning Regulation mentions 8 zones (UA, UB, UC, UD, I, T, NA, ZPP and NE). However, in Vientiane Master Plan 2010 provided on year 2000, land use zone was classified into 17. UA and ZPP zone were divided into sub-zones and UE, UF, T, Em, Ef, Eh and A zones were newly created and added. Land use zones used in the Master Plan 2010 are basically followed in this study (Vientiane Master Plan 2030).

Table 5.3.10: Present Land Use Zone designated in the Law and Order and the Master Plans

Level of City	Law and Order		Master Plan		
	Law on Urban Plan	Ministerial Order on Urban Planning Regulations	Vientiane Master Plan (2010)	Vientiane Master Plan (2030)	Other City (Kaysone Phomvihane - Level 2)
Level 1 & 2 (city under the central and provincial level)	UA	UA	UAa	UAa	UA
			UAb		
	UB	UB	UB	UBb	UB
			UC	UCa	
	UC	UC	UD	UDa	UC
			UF	UDb	
	UD	UD	UE	UEa	
				UEb	
			T	T	T
			I	I	I
			NA	NA	NA
		ZPP	ZPP-Ua	ZPP-Ua	ZPP
			ZPP-Ub	ZPP-Ub	
			NE	NE	NE
		Em	Em		
		Ef	Ef		
		Eh			
		A			
Level 3 (city under the district)	UA	UA			
	UD	UD			
		I			
		NA			
		NE			

Source: Law on Urban Plan, Ministerial Order on Urban Planning Regulations, Vientiane Master Plan (2010), Vientiane Master Plan (2030), and Master Plan of Kaysone Phomvihane provided by JST on 2009

Classification of land use zone mentioned in the Law and Order is very rough and the number of zones is not so many. It does not fit in reflecting the characteristics of existing land use or zone to the urban planning. Ramified and unified land use zone should be used in the Law and Order.

Therefore, JST proposes more elaborate land use zones as shown in Table 5.3.11 below. Proposed land use zones should be revised and added in the Law and Order for prevailing among persons and authorities related to urban planning in Lao PDR.

Zones proposed can be selected considering characteristics of the urban planning target city or area such as history, culture, land use, development direction and urban structure. Each zone can also be subdivided into two to three sub-zones such as Zpp-Ua and ZPP-Ub or UAa, UAb and UAc.

Table 5.3.11: Proposed Land Use Zone for amendment of Law on Urban Plan

Level of City	Law on Urban Plan and Ministerial Order on Urban Planning Regulations	
	Legend	Land Use Zone
Level 1 & 2 (city under the central and provincial level)	ZPP	Historical and preservation zone
	UA	Urban central zone
	UB	Urban inner zone
	UC	Urban inner zone with special condition
	UD	Urban suburbs or surrounding zone
	UE	Urban expansion zone (Future development zone)
	UF	Village surrounded by rice field
	I	Industrial zone
	T	Transport zone
	NA	Agriculture zone
	NE	Forest and natural zone
	E	Service zone (Education, Health, Military, etc.)
	Level 3 (city under the district)	UA
UE		Urban expansion zone (Future development zone)
I		Industrial zone
NA		Agriculture zone
NE		Forest and natural zone

Source: JST

3) Development Permission System (Addition)

Urban areas of Vientiane Capital are expected to expand toward the year 2030. It means that a number of large scale land developments such as residential area, industrial park, commercial complex and sport/recreation zone development will be planned and implemented in Vientiane Capital in the future.

Therefore, land development management system is needed for orderly development of land in both urbanization promotion area and urbanization control area shown in the urban master plan.

JST proposes a development permission system in Lao PDR. Article on the development permit should be added in the Law on Urban Plan and the Order.

a) Purpose

The purpose of this System is to secure the zoning of the city planning area, to encourage the formation of favorable and safety urban area, and to prevent unregulated urbanization.

b) Development Activity

Development activity as used in this System means “to make alterations to the shape and quality of zoning”, such as construction of buildings, industrial plans and golf courses.

c) Development Permission

Persons who intend to perform development activities in the city planning areas shall obtain permission in advance from the governor of the prefecture where the city where development activities are conducted belongs to.

Persons who intend to perform the certain scale of development activities outside of the city planning areas shall obtain permission in advance from the prefectural governor.

d) Development Scale regulated

Table below shows development scale regulated by area where development activities are planned.

Table 5.3.12: Development Scale regulated by Area

Area		Development Scale (Example)	Note
City Planning Area	Urbanization Promotion Area	Development activities on a scale greater than 500m ²	
	Urbanization Control Area	All the development activities	NE, A, NA, I, T, and E Zone
Outside of City Planning Area		Development activities on a scale greater than 1,000m ²	

Source: JST

Development activities indicated below shall be exempted:

- Development activities performed for the purpose of constructing buildings for agriculture, forestry or fisheries or buildings for dwelling by persons engaged in these sectors;
- Development activities performed for the purpose of stations or other railway facilities, libraries, community halls, transformer substations or similar buildings necessary for the public interest
- Development activities performed as emergency measures necessitated by unforeseen disasters, etc.

e) Procedure of Application for Permission

Persons who intend to obtain the development permission shall submit to the prefectural governor a written application in which the following matters are described:

- Location, extent and scale of the development area (if the development area is divided into work areas, the development area and work area);
- Uses of the buildings or special structures scheduled to be built in the development area (hereinafter referred to as "scheduled buildings etc.");
- Design relating to the development activities
- Construction executor
- Consultation and consent of administrators of development activities-related public facilities

f) Prior Consultation

Persons who intend to conduct development activities have to submit the prior consultation form to the provincial governor and consult on development contents with the provincial governor.

Necessary number of copies of the prior consultation form with drawings described in the attached table has to be submitted.

Prior consultation required in the development permit can be replaced by prior consultation required in the development guideline.

g) Consultation for Change of the Development Plan

Persons who intend to conduct development activities have to submit necessary number of copies of the consultation form for change of the development plan promptly in case the plan of development activity is changed after finishing and agreeing the prior consultation on the plan. Reason of change and drawings on change have to be attached to the consultation form for change of the development plan.

h) Development Permission Criteria

Upon receipt of application for development permission, the prefectural governor shall grant the development permission if the governor judge the development activities permitting to the said application conform to the following criteria and that procedure for the application does not violate the provision of this System.

- In cases zone is specified to the land where the development activities are conducted, the development activities have to conform to the restriction on the use within the relevant zone.
- In cases of development activities other than development activities carried out mainly for buildings of own private dwelling, roads, parks, open spaces and other vacant spaces for public use shall be of scale and structure that will cause no inconvenience from the viewpoints of environmental preservation, disaster prevention, traffic safety and the efficiency of business activities considering the following items and shall be properly located; and main roads in development areas shall be designed so as to connect with considerably large roads outside of the development areas.
 - a) Scale and shape of the development area and the conditions of its surroundings;
 - b) Topography of land in the development area and nature of the ground;
 - c) Uses of scheduled buildings, etc;
 - d) Scale and layout of the sites of scheduled building, etc.
- Sewers and other drainage facilities shall be designed considering the following matters with structure, capacity and appropriate layout that allow effective removal of the sewage in the development area and will not cause any damage in the development areas and surrounding areas by inundation etc.
 - a) Precipitation in the relevant area
 - b) Scale and shape of the development area and the conditions of its surroundings;
 - c) Topography of land in the development area and nature of the ground;
 - d) Uses of scheduled buildings, etc;
 - e) Scale and layout of the sites of scheduled building, etc.
 - f) Conditions in the discharge destination
- In cases of development activities other than development activities carried out mainly for buildings of own private dwelling, waterworks and other water supply facilities shall be designed considering the matters listed in item 2) sub-items (a) to (d) with structure, capacity and appropriate layout that will not hinder anticipated demand in the development areas.
- Uses of public facilities, schools and other facilities for the public interest and of scheduled buildings, etc. in the development areas shall be distributed for improvement of convenience in the development areas and for preservation of environment in the development areas and surrounding areas, considering the purpose of the development activities.

- Design of ground improvement, construction of retaining walls or drainage facilities or other necessary measures for securing safety of the land of the development area shall be conducted for the purpose of preventing disasters caused by ground settlement, landslides, flooding or others.
- In cases of the scale of development activities is greater than the certain scale, the development design, in order to preserve the environment of the development areas and surrounding areas, shall include necessary measures such as preservation of trees and preservation of surface soil which are needed for ensuring growth of plants in the development area, considering the purpose of the development activities and the matters listed in item 2) sub-items (a) to (d).
- In cases of the scale of development activities is greater than the certain scale, the development design, in order to preserve the environment of the development areas and surrounding areas, shall include setting up of green zones and other buffer zones necessary for preventing deterioration of the environment due to noise, vibrations, etc. considering the purpose of the development activities and the matters listed in item 2 sub-items (a) to (d).
- In cases of development activities other than development activities carried out mainly for buildings of own private dwelling, building and/or constructing non-residential buildings or special structures for private work, construction executors shall possess the necessary capacity to complete the development activities-related construction.

i) Development Activities in Urbanization Control Areas

The prefectural governor shall not grant development permission of development activities within urbanization control areas unless the development activities applied conform to any of the following items;

- Development activities for facilities for public interest and for facilities such as stores, workshops and similar buildings for selling, processing or repairing commodities used daily by inhabitants who live in the development areas and surrounding areas
- Development activities for facilities for disposing, storing or processing agricultural, forest or marine products
- Development activities that no promotion of urbanization is expected at surrounding area of the development areas and that is difficult or extremely inappropriate to implement in urbanization promotion areas.

j) Development Activities by State or Prefectures, Cities

The development permission for development activities executed by the State or prefectures, cities is granted when the relevant State agencies or the Prefectures, cities and a prefectural governor consult and agree the development activities.

k) Notice of Permit or Not Permit

When the prefectural governor receives applications for development permission, the prefectural governor shall make decision of either permit or not permit and notice without delay.

l) Inspection for Completion of Construction

- When persons who have received the development permission complete the development activities-related construction for all of the development areas, they shall notify the prefectural governor.
- When the prefectural governor receives the notification from persons who completed the development activities-related construction, the provincial governor shall inspect whether or not the construction is in conformity with the contents of the development permission without delay and when, as a result of such inspection, the provincial governor finds that the construction is in conformity with the contents of the development permission, the prefectural governor shall issue a certificate of inspection passed to the persons who were permitted the development.
- When the prefectural governor issues a certificate of inspection passed, the prefectural governor shall give the public notice that the construction work has been completed without delay.

m) Building Restrictions, etc.

No buildings or specific structures shall be constructed within the development area until the public notice of the construction completion is issued. However, this shall not apply to cases for construction of temporary buildings or specific structures for the development activities-related construction.

n) Discontinuance of Development Activities

In case persons who have obtained development permission discontinue the development activities-related construction, they shall notify the prefectural governor discontinuance without delay.

o) Management of Public Facilities established by Development Activities, etc.

In case public facilities are established as a result of development activities or the development activities-related construction for which the development permission has been issued, the public facilities shall, on the day following the day on which the public notice provided, come under the management of the municipalities in which the public facilities are located. However, if there are administrators provided by other laws, the public facilities shall come under the management of such administrators.

p) Possession of Land used for Public Facilities

In case former public facilities are replaced and new public facilities are established as a result of development activities or the development activities-related construction for which the development permission is issued, the land used for the former facilities and owned by the State or local governments shall belong to the persons who have obtained the development permission as of the following the day of the public notice and the land used for the new public facilities established shall belong to the State or the relevant local governments at the same day (as of the following the day of the public notice).

q) Designation of Building Coverage Ratio, etc. of Buildings

When the prefectural governor deems necessity of development permission for development activities at outside of the urban planning area and/or at zone NA, A, NE, I, T, and E in the urbanization control area, the governor may prescribe limitation on the building coverage ratio,

building height, set back of wall or building surfaces, and building site, etc. in the development area.

In areas of land where limitation on the building coverage ratio, building height, set back of wall or building surfaces, and building site, etc. no buildings shall be built in violation of the restrictions. However, this shall not apply to the case where the prefectural governor give the permission that construction will not hinder the preservation of the environment in the areas and surrounding areas or that it is unavoidable from the public interest point of view.

r) Restrictions on Buildings, etc. on Land with Development Permission

After the issuance of the public notice on completion of construction, no construction of new buildings or new specific structures other than the scheduled buildings permitted to construct is permitted. Making buildings other than the scheduled buildings permitted to construct by reconstruction and/or change of use of buildings is also not permitted.

s) Restrictions on Buildings, etc. within Urbanization Control Area

Without obtaining permission of the prefectural governor, any person shall not, in any area in urbanization control areas other than development areas for where the development permission has been granted, newly build any buildings other than those prescribed as below;

- Construction of buildings for agriculture, forestry or fisheries or housings for peoples engaged in these sectors
- Stations or other railway facilities, libraries, community halls, transformer substations or similar buildings necessary for the public interest

However, building construction activities prescribed below are not applied,

- Buildings studied, constructed and/or reconstructed by the government
- Buildings studied, constructed and/or reconstructed by cooperation of the government and foreign assistant agencies
- Temporary buildings construction
- Building construction and/or reconstruction conducted as emergency measures for disaster prevention
- Minor repair for building maintenance

t) Development Investigation Committee

Development Investigation Committee shall be established in the prefectural government in order to force to make decisions in response to the application for investigation of development activities especially change of building use in the urbanization control areas.

Development Investigation Committee shall consist of several members. The members shall be appointed by the prefectural governor from among such persons having excellent experience and knowledge in law, economics, city planning, architecture, public administration in Lao.

u) Reporting, Recommendations, etc.

The prefectural governor may request the persons those who have received development permission to submit reports and materials or may give necessary recommendations or advice.

v) *Supervisory Dispositions etc.*

The prefectural governor can dispose followings mentioned below,

- revoke, alter or suspend the permission given pursuant to the provisions of this System
- change conditions of the permission or attach new conditions to the permission
- discontinue the construction or other activities
- set reasonable time limits and order such persons to rebuild, move or remove buildings and other structures or objects, or
- take some other measures necessary for rectifying the violations.

w) *Inspection at the Development Area*

When it is necessary for exercising the powers such as supervisory dispositions etc., the prefectural governor may enter into the development area in order to inspect the status of construction being executed on the said area.

x) *Punitive Provisions*

Any person who falls under any of following items shall be punished by a fine.

- Any person who has carried out development activities without the development permission.
- Any person who has carried out development activities without permission for change, notwithstanding the contents of the development permission has been changed.
- Any person who start construction before the public notice for the completion of construction.
- Any person who has built the buildings which different from the scheduled buildings pertaining to the development permission.
- Any person who has been requested to submit reports or materials has failed to submit the reports or materials, or has submitted false reports or materials.
- Any person who has refused, obstructed or evaded inspections at the development area.

y) *Required Documents*

The design drawings and documents shall be attached to the form of prior consultation. Same drawings attached to the form of prior consultation can be attached to the written application for the development permission.

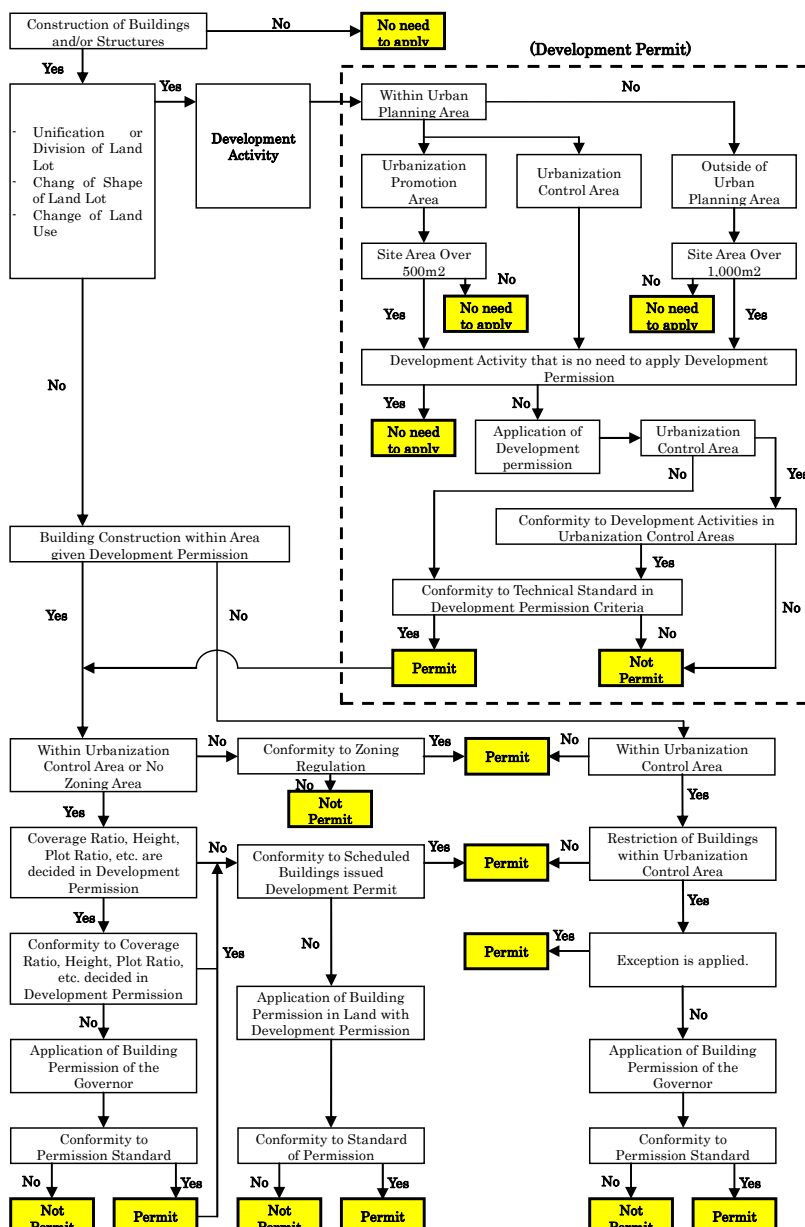
Table 5.3.13 shows documents required for development permission.

Table 5.3.13: Documents Required

Design Drawings	Contents
Location Map (S=1/10,000 and more)	Location of development area in a district in a province
Existing Map (S=1/1,000~5,000)	Boundary of the development area Topography (height, vegetation) Location and shape of the existing buildings, etc. Location and shape of roads, parks, green areas, open spaces, rivers, waterways, etc. in the development areas and surrounding areas. Width of roads, rivers and waterways
Land Use Plan (S=1/1,000~5,000)	Boundary of the development area Location, shape and scale of the parks, green areas and open spaces Location, shape and width of the roads outside of the development area Location, shape and direction of the water flow of the drainage facilities. Location and shape of retention ponds Location and shape of rivers and water ways Shape and area of the scheduled buildings, etc. Uses of the scheduled buildings, etc. Location, shape and width of the buffer zones Location and shape of surface of slopes Location and type of retaining walls
Land Development Plan (S=1/1,000~5,000)	Boundary of the development area Planning Height of the land development Location, type and height of retaining walls Location and shape of surface of slopes Length, width, grade and formation-height of intersection of roads. Location and shape of retention ponds Shape and formation-height of areas of scheduled buildings, etc.
Cross Section of Land Development (S=1/500~1,000, V=1/50~100)	Boundary of the development area Height of the ground before and after the constructions
Road Structure Plan (S=1/50~1/200)	Cross section of roads Facilities necessary for roads
Drainage Facilities Plan (S=1/1,000~5,000)	Boundary of the development area Boundary of the drainage areas Location and shape of retention ponds Location, shape, type, direction of water flow of roadside ditches and other drainage facilities Name, location and shape of rivers and water ways to be discharged to
Water Supply Facilities Plan (S=1/1,000~5,000)	Boundary of the development area Location and form/figure of the Water Supply Facilities Location of the fire hydrant Shape of the sites of the schedule buildings, etc.
Building Drawings	Drawings of buildings which are scheduled to construct

Source: JST

Figure 5.3.7 shows Flow of Land Development Permission proposed. EIA or IEE Approval and Building Permission are needed separately.



Source: JST

Figure 5.3.7: Flow of Land Development Permission

(2) Revision of Decree on the Implementation and Activities of VUDAA

A decree on the Implementation and Activities of VUDAA stipulates the management area in Article 1 and 2, duties in Article 3 and organizational framework in Article 5.

JST proposes, however, that consolidation and integration of the organizations of DPWT and VUDAA in Vientiane Capital should be needed. VUDAA should be an agency for the management of solid waste and night soil and urban beautification and cleaning in the Capital.

Therefore, Article 1, 2, 3, 5 and other articles related should be revised properly.

Table 5.3.14: Amendment of Articles in Decree on VUDAA

Article	Present Contents	Proposed Contents
Article 1	The establishment of VUDAA that cover the focus point in four districts....	The VUDAA that cover the whole area of Vientiane Capital ...
Article 2	VUDAA that works in, has the role in planning, implementing activities of the management urban in the scope of four districts that ...	VUDAA that works in, has the role in planning, implementing activities of the management urban in the scope of the whole area of Vientiane Capital that ...
Article 3	2, Construct, improve and repair the infrastructure and the service in the urban that will include: Road, Drainage, Keep and eliminate the garbage, ... Clean and keep the environment...	2, Construct, improve and repair the infrastructure and the service in the urban that will include: Keep and eliminate the garbage, Clean and keep the environment...
Article 5	Organizational Framework of VUDAA: A. The Leadership consist of: 1. 2. 3. Four committees that will be the District Chiefs of each district.	Organizational Framework of VUDAA: A. The Leadership consist of: 1. 2. 3. delete

Source: Decree on the Implementation and Activities of VUDAA

(3) Preparation of Development Guideline

For the control and management of urban area to maintain good living environment, the development guideline, which consists of development criteria of public facilities and necessary matters concerning large scale land development activities, should be provided for the promotion of public facilities development. Table 5.3.15 shows items and contents that should be included in the Guideline developed. Development criteria for provision of public facilities can be decided and provided by each province referring relevant Ministerial Orders and considering characteristic of geography and meteorology of each province.

The Guideline will be applied to all development activities which requires development permit as proposed by JST to be stipulated in the Law on Urban Plan. Prior consultation required in the Guideline can be replaced by prior consultation for the development permit of the Law on Urban Plan. Drawings provided based on the Guideline can also be used for the development permit.

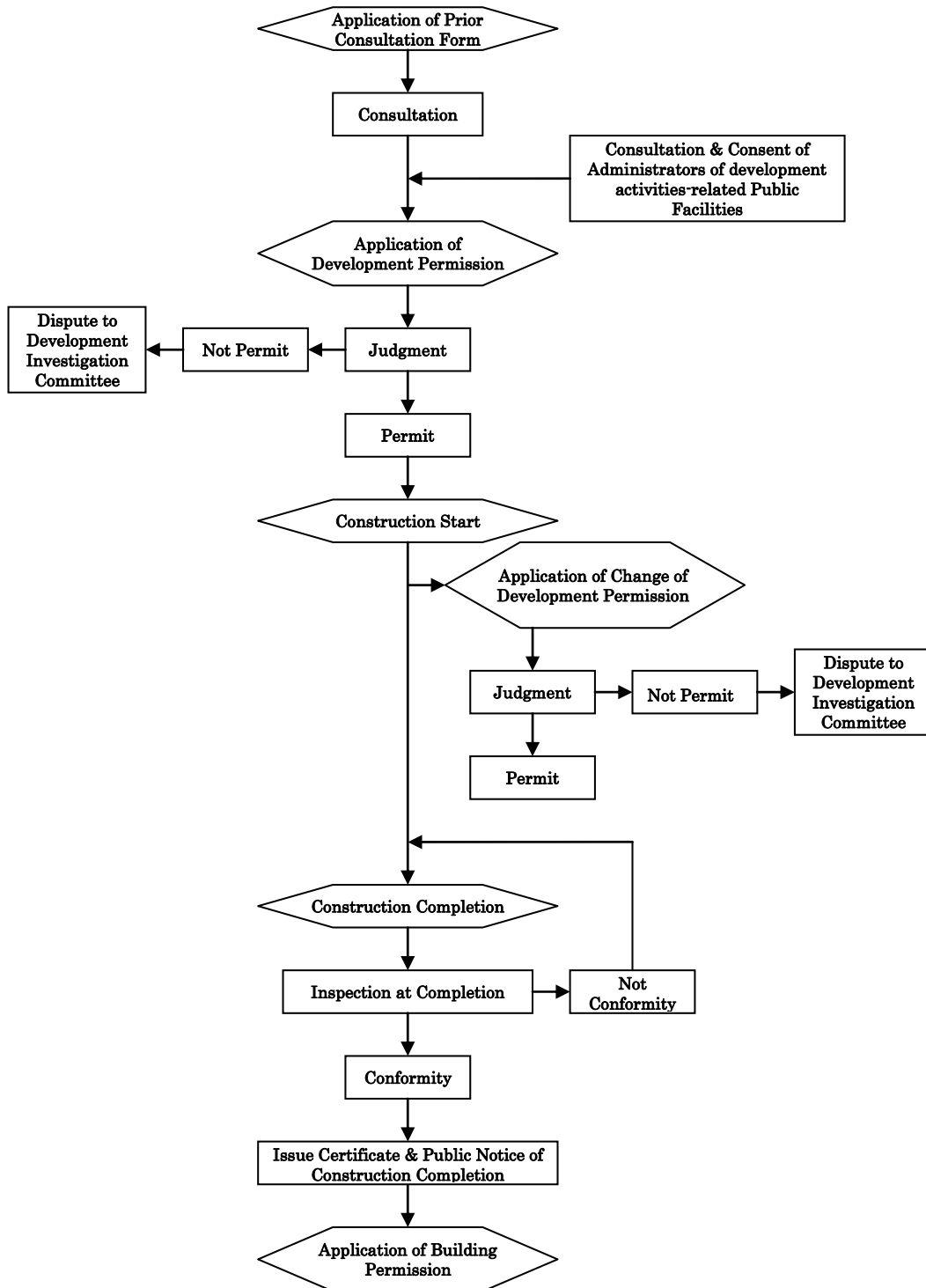
Table 5.3.15: Items and Contents included in the Guideline

Item	Sub-item	Contents
General Rule	Prior consultation	Necessity of prior consultation
	Information to inhabitant	Information to inhabitant on development activities
	Inspection	Inspection of development activities by authorities
	Development of public facilities	Development of public facilities in the development area by owners responsibility
	Attribution of public facilities	Attribution of public facilities constructed by owners to a local government
	Prevention of damage	Prevention of damage caused by development activities
Road	Road width	Minimum width of roads constructed in the development area
	Roads connected	Width of roads which main roads in the development area connect
	Sidewalk	Development of sidewalk
	Structure and pavement of road	Road alignment, type of pavement, No. of lane, etc.
	Consultation for road usage	Consultation with authorities responsible for management of public roads on usage of public roads for development activities

Water Supply	Planning of water supply	Planning of water supply system in the development area
	Consultation with administrators of water supply	Prior consultation with administrators of water supply on connection to a main pipe located at outside of the development area
	Water supply facility	Structure of water supply facilities
Drainage (rain water and sewage)	Planning of drainage	Planning of drainage system in the development area
	Consultation with administrators of rivers/drainages	Prior consultation with administrators of rivers/drainages on discharge of sewage and rain water
	Drainage facility	Structure of drainage facilities
	Development of a retention pond	Necessity of a retention pond in the development area for prevention of flood that may be caused by land development
Electricity	Planning of electricity	Planning of electricity system in the development area
	Consultation with an electricity company	Prior consultation with an electricity company on connection/leading-in point
Park	Development of park	Type and scale and location of parks developed in the development area according to scale of the area of development
	Facilities of park	Possible facilities developed in parks
Fire Equipment	Facilities for fire fighting	Development of facilities for fire fighting
	Building and fire fighting	Development of roads/spaces and evacuation facilities for fire fighting vehicles in case of construction of mid-high rise buildings
Solid Waste Collection Point	Development of solid waste collection points	Location and size of solid waste collection points
	Disposal of solid waste	Management of solid waste discharged by business offices and factories
Transport Facility	Parking	Necessity of parking development at each building in the development area
Cultural Properties Protection	Buried cultural properties	Implementation of necessary measures, in case buried cultural properties are found during development activities
Land Use	Landscape	Consideration of harmony with the surrounding landscape and town scenery
Drawings	Necessary drawings	Drawings necessary for submission for prior consultation (Same drawings mentioned in the development permit)

Source: JST

Figure 5.3.8 shows flow from prior consultation on development to application of building permission. Form of Prior Consultation for the Development Activities (Form-1), Form of Consultation for Change of the Development Activity (Form-2) and Form of Reasons for Change of the Development Activity (Form-3) proposed are also shown.



Source: JST

Figure 5.3.8: Flow from Prior Consultation on Development to Application of Building Permission

Form-1

Form of Prior Consultation for the Development Activities

Date of Application

To the Governor

Address

Project Owner Name Signature

Tel.

Summary of Development Plan

Location of the Project Area					
Area of the Project	M2	Within Urban Plan Area	Urbanization Promotion Area	Urbanization Control Area	
Zone designated		Outside of Urban Plan Area			
Purpose of the Development		Plot Area	Max.	M2	
No. of scheduled Plots			Min.	M2	
Construction Term	~				
No. & Type of the scheduled Building	Single House:		Tenement House:		
	Mid-high rise Building:		No. of Ground and Underground Floors		
	Height:	m	Structure:		
Land Development	Fill Volume	m3	Cut Volume	m3	
	Surplus Volume (Cut – Fill)		m3		
Access Road			Connection or of Discharge Sewerage	Sewage	
				Storm Water	
Land Use	Plot	Road	Park	Others	Total
	M2	M2	M2	M2	M2
	%	%	%	%	100%
Public Facilities	Road	Sewerage		Park	Others
Design Person	Address			Tel.	
	Name			Person in charge	

Source: JST

Form-2

Form of Consultation for Change of the Development Activity

Date of Application

To the Governor

Project Owner Address
Name Signature
Tel.

Summary of Development Plan

Location of the Project Area					
Area of the Project	M2	Within Urban Plan Area	Urbanization Promotion Area	Urbanization Control Area	
Zone designated		Outside of Urban Plan Area			
Purpose of the Development		Plot Area	Max.	M2	
No. of scheduled Plots			Min.	M2	
Construction Term	~				
No. & Type of the scheduled Building	Single House:		Tenement House:		
	Mid-high rise Building:		No. of Ground and Underground Floors		
	Height:	m	Structure:		
Land Development	Fill Volume	m3	Cut Volume	m3	
	Surplus Volume (Cut – Fill)		m3		
Access Road		Connection Discharge Sewerage	or of	Sewage	
				Storm Water	
Land Use	Plot	Road	Park	Others	Total
	M2	M2	M2	M2	M2
	%	%	%	%	100%
Public Facilities	Road		Sewerage		Park
Design Person	Address			Tel.	
	Name			Person in charge	

Source: JST

Form-3

Form of Reasons for Change of the Development Activity

Reasons of Change:

Contents of the Plan or Activities Changed	
Original Plan or Plan Before Changed	Changed Plan

Source: JST

(4) Preparation of Law or Decision on Building Standard

In January, 2010, a seminar of Building Standard was held by MPWT in cooperation with MNLITT, Japan (Ministry of National Land, Infrastructure, Transportation and Tourism). Revision of Building Standard has been worked out and on 26th of November the draft was submitted to be approved. It may take about one (1) year till its enforcement. The contents have possibility to be improved to be specific enough for implementation for appropriate practice.

1) Consolidation of Existing Articles related to Building Standard

Table 5.3.16 shows Decision/Regulation and its main contents related to building in Vientiane and in Lao PDR.

Decision of the Minister of MCTPC on Building Management which mentions mainly on confirmation and permission of building constructed is being used for management of buildings constructed in urban plan area by urban management authorities (DPWT, OPWT and VUDAA) and design and/or construction firms at present. Draft Decision of the Minister of MPWT on Building Control which is now being prepared by DHUP in MPWT describes mainly on building structure such as loads and forces, structural calculation, fire protection, and lighting and ventilation. Regulation of Zoning Control of Vientiane Capital includes some articles related to building construction such as a plot for buildings, building use, coverage ratio, plot ratio and maximum building height in the urban plan area.

Table 5.3.16: Decision/Regulation and Main Contents related to Building

Decision/Regulation	Main Contents related to Building
Building Management	confirmation and permission system of building constructed
Regulation of Zoning Control	size of building (plot for buildings, building use, coverage ratio, plot ratio and maximum building height in the urban plan area)
Building Control (Draft)	building structure (loads and forces, structural calculation, fire protection, and lighting and ventilation)

Source: Decision of the Minister of MCTPC on Building Management, Regulation of Zoning Control of Vientiane Capital and Draft Decision of the Minister of MPWT on Building Control

All the persons and companies related to building confirmation such as building owners, design companies, constructors and persons in OPWT and DPWT refer those Decisions and the Regulation for preparation of documents needed for building confirmation. It is complicated. These should be consolidated to one new Decision named the Building Standard. In addition, some new items and contents should be added in the Building Standard. Items and contents newly added are shown in the Table 5.3.17 below.

Table 5.3.17: Items and Contents which should be added in the Building Standard

Items	Contents
Agency for Building Confirmation	Division in agency responsible for building confirmation and issuance of certificate
Person in Charge of Building Confirmation	Provision of person in charge of building confirmation in OPWT and DPWT Criteria of person in charge of building confirmation
Design and Supervision	Criteria of person who designs buildings and supervises building construction
Restriction of Building Use	Restriction of use of building before issuance of certificate of final inspection
Land Requirement	Requirement of sanitation, hygiene and safety to the land/site of buildings constructed
Agreement on Building	Objectives, application, notice, public hearing and approval, Validity of agreement

Source: JST

Establishment of the Building Standard is a key for building control and ordered urban development. Study on consolidation and adjustment of existing Ministerial Decisions on building and the Regulation of Zoning Control of Vientiane Capital and study on items and contents newly added should be conducted by DHUP of MPWT with help of DPWT and OPWT promptly.

Table 5.3.18 below shows items and contents which should be included in the Building Standard.

Table 5.3.18: Items and Contents of Building Standard proposed by JST

Items	Contents	Remarks
Part I: General Provision		
1. Objectives and Principles	Objectives of this building standard Principles of the building control	Article 1 in BM ^{*1} Article 1 and 4 in BC ^{*2}
2. Definitions	Definition of words used in this standard	Article 3 in BM ^{*1} Article 3 in BC ^{*2}
3. Scope	Scope of usage or application of this standard Exception of usage or application	Article 2 in BM ^{*1} Article 5 in BC ^{*2}
4. Agency for Building Confirmation	Division in agency responsible for building confirmation and issuance of certificate Level 1: Housing & Urban Planning Unit in OPWT of the district Level 2: Housing & Urban Planning Office in DPWT of the province	New
5. Person in Charge of Building Confirmation	Provision of person in charge of building confirmation in OPWT and DPWT Criteria of person in charge of building confirmation	New
6. Person who approves and certifies	Person who approves confirmation and issues certificate of inspection Level 1: A governor of district Level 2: A director of the DPWT	Article 4 in BM ^{*1}
7. Design and Supervision	Criteria of person who designs buildings and supervises building construction Architects, housing survey and design companies and constructors who are legally approved by the government	New
8. Application and Confirmation	Type of confirmation Category of building Confirmation of forms and documents applied Criteria of confirmation Issuance of certificate of confirmation Exception on building confirmation Interim and final inspection Filing of copy of document	Article 7, 8, 9, 10, 11, 12 in BM ^{*1} Article 6 and 7 in BC ^{*2}
9. Application Drawings	Necessary documents for application Necessary information in drawings applied Scale of drawings	Article 5 in BM ^{*1} Article 9, 10, 11 and 12 in BC ^{*2}
10. Validity of Certificate of Confirmation	Term of validity of certificate of building confirmation	Article 6 in BM ^{*1}
11. Restriction of Building Use	Restriction of use of building before issuance of certificate of final inspection	New
12. Management and Inspection Authority	Management and inspection authorities for implementation of the building standard	Article 13, 14, 15, 16 and 17 in BM ^{*1} Article 40, 41, 42 and 43 in BC ^{*2}

12. Duty and Responsibility of Building Owners and Contractors	Duty and responsibility of building owners Duty and responsibility of contractors	Article 18 and 19 in BM ^{*1}
Part II: Plot, Structure, Facilities and Equipments of Building		
13. Land Requirement	Requirement of sanitation, hygiene and safety to the land/site of buildings constructed	New
14. Loads and External Force	Resistance to loads and external forces Kind of loads and external forces	Article 13 and 14 in BC ^{*2}
15. Fire Protection	Fire resistance Fire evacuation ways and fire exits Signs of fire evacuation and exits, etc. Appliances forbidden for installation	Article 15, 16, 17, 18, 19, 20, 21, 22, 23, 24 and 25 in BC ^{*2}
16. Lighting and Ventilation	Normal lighting and ventilation Emergency lighting and ventilation Room size and height	Article 26, 27, 28, 29, and 30 in BC ^{*2}
17. Sanitation	Water supply system Wastewater Disposal system Storm drainage system	New
18. Electricity	Regulation on electricity	New
19. Elevator	Regulation on installation of elevators	New
20. Supporting for the Disable	Supporting facilities for the disable Requirement of supporting facilities Hearing augmentation Tactile indicators	Article 32, 33, 34 and 35 in BC ^{*2}
21. Building Projection over Public Streets	Projection of balconies and appendages over streets Door and window Corner buildings	Article 37, 38, and 39 in BC ^{*2}
Part III: Plot for Buildings and Building Use in the Urban Plan Area		
22. Scope	Scope and exception of usage this part	New
23. Relation between Road and Plot	Adjacent to public road Access road connecting plot and public road	Article 3 in R.O.Z ^{*3}
24. Building Line	Building line from R.O.W. of public road	Article 6 in R.O.Z ^{*3}
25. Building Location	Building location from boundaries	Article 7 in R.O.Z ^{*3}
26. Buildings in a Plot	Necessary space between buildings in a plot	Article 8 in R.O.Z ^{*3}
27. Building Use	Use of building permitted and prohibited in each zone	Article 1 and 2 in R.O.Z ^{*3}
28. Coverage Ratio, Plot Ratio and Building Height	Coverage ratio Building Height Plot Ratio	Article 9, 10 and 14 in R.O.Z ^{*3}
29. Agreement on Building	Objectives Application for approval of the building agreement Notice, public hearing and approval on agreement Validity of agreement	New
Part IV: Reward and Penalty		
30. Reward	Reward for persons who conducted very well	Article 20 in BM ^{*1}
31. Penalty	Penalty for persons who violated this standard	Article 21 in BM ^{*1}

Source: JST

Note: *1 – Decision of the Minister of MCTPC on Building Management (BM)

*2 – Draft Decision of the Minister of MPWT on Building Control (BC)

*3 – Regulation of Zoning Control of Vientiane Capital (R.O.Z)

2) Revision of Coverage Ratio, Maximum Height of Building and Plot Ration

Standards on Coverage Ratio, Maximum Height of Building and Plot Ratio of only 4 land use zones (UA, UB, UC and UD) are mentioned in the Ministerial Order on Urban Planning Regulation (refer to Table 5.3.19).

Table 5.3.19: Coverage Ratio, Maximum Height of Building and Plot Ratio by Land Use Zone by City Level

Land Use Zone	Coverage Ratio			Max. Height of Building			Plot Ratio		
	City Level			City Level			City Level		
	Central	Provin.	District	Central	Provin.	District	Central	Provin.	District
UA	75%	70%	60%	26 m	23 m	18 m	2.5	2.0	1.8
UB	60%	50%	-	20 m	15 m	-	1.5	1.2	-
UC	50%	40%	-	15 m	12 m	-	1.0	0.8	-
UD	70%	60%	50%	23 m	18 m	15 m	2.0	1.8	1.5
Conserve. Zone	Follow the regulation on conservation								
Special Economic Zone	Follow other regulation								
New Economic Zone									

Source: Ministerial Order on Urban Planning Regulations

However, land use zone was classified into 17 and standards on Coverage Ratio, Maximum Height of Building and Plot Ratio of 17 zones were described in Vientiane Master Plan 2010 provided on year 2000. Vientiane Master Plan 2030 basically follows land use zones and these standards (refer to Table 5.3.10) used in the Master Plan 2010 in this study for appropriate management of urban growth in the future. JST proposes ramified and unified 12 land use zones for revision of land use mentioned in the Law on Urban Plan.

Coverage ratio, maximum height of building and plot ratio are very important and influence to following points.

- Creation and maintenance of good environment of blocks and urban area
- Appropriate distribution of night population and workforce and industrial activity, and
- Maintenance and improvement of capacity of public facilities such as road and water supply

Therefore, considering the Ministerial Order on Urban Planning Regulation, the Regulation of Zoning Control of Vientiane Capital and the draft Urban Development Master Plan of Vientiane Capital 2030, coverage ratio, maximum height of building and plot ratio of 12 land use zones shown in Table 5.3.20 is proposed as a standard on a building size in Lao PDR. This standard should be added in the Building Standard.

**Table 5.3.20: Standard proposed on Coverage Ratio, Maximum Height of Building and Plot Ratio by Zone
by Level of City**

Level of City	Zone	Coverage Ratio (%)	Max. Height of Building (m)	Plot Ratio	Remarks
Level 1 & 2 (city under the central and provincial level)	ZPP*	50 ~ 75	7 ~ 20	0.7 ~ 2.0	Historical and preservation
	UA	60 ~ 75	18 ~ 26	1.8 ~ 4.0	Urban central zone
	UB	50 ~ 60	15 ~ 20	1.2 ~ 3.0	Urban inner zone
	UC	40 ~ 50	7 ~ 15	0.8 ~ 1.0	Urban inner zone with special condition
	UD*	40 ~ 50	7 ~ 15	0.7 ~ 2.0	Urban suburbs or surrounding zone
	UE**	50 ~ 70	23 ~ 50	3.0 ~ 6.0	Urban expansion zone (Future development zone)
	UF	40	10	1.0	Village surrounded by rice field
	I	40	15	1.5	Industrial zone
	T	***	***	***	Transport zone
	NA	***	***	***	Agriculture zone
	NE	***	***	***	Forest and natural zone
Level 3 (city under the district)	E	***	***	***	Service zone (Education, Health, Military, etc.)
	UA	60 ~ 75	18 ~ 26	1.8 ~ 4.0	Urban central zone
	UE**	50 ~ 70	23 ~ 50	3.0 ~ 6.0	Urban expansion zone (Future development zone)
	I	40	15	1.5	Industrial zone
	NA	***	***	***	Agriculture zone
	NE	***	***	***	Forest and natural zone

Source: JST

Note: * Proper figure of Coverage Ratio, Maximum Height of Building and Plot Ratio can be selected and used considering condition and characteristics of each zoning.

** When specific conditions (public open space, public greenery space, indoor facility for public benefit and fireproof building) are met, 50m of Building Height and 6.0 of Plot Ratio can be used.

*** As these specific land use zones are not for residential use, building construction is permissible at minimal.

3) Flow from Building Confirmation to Certificate of Construction Completion

Figure 5.3.9 shows flow from building confirmation to certificate of construction completion based on the building confirmation system proposed by JST.

Table 5.3.21 shows items and contents which should be confirmed at document confirmation phase and building construction phase.

Table 5.3.21: Confirmation Items and Contents of Building Confirmation

Items of Confirmation	Contents of Confirmation
Document Confirmation Phase	
Documents	Application letter for construction confirmation Residence certificate of applicant Certification documents on legal land use right of applicant Location plan and picture of the site
Description Report	Zone classified in the urban master plan, use of a building Type of activity, earth volume, area of building floor, building height, etc. Coverage ratio, plot ratio, building height, building line, set back Provision of parking Structure calculation (Level 2 only)
Drawings	Seal of design company stamped on drawings Layout plan, elevation plan, front view, cross sections and profile
Site Inspection	Location and condition of site, adjacent buildings, road and river/drainage
Construction Phase	
Interim Inspection	Conformity to drawings certified
Final Inspection	Conformity to drawings certified

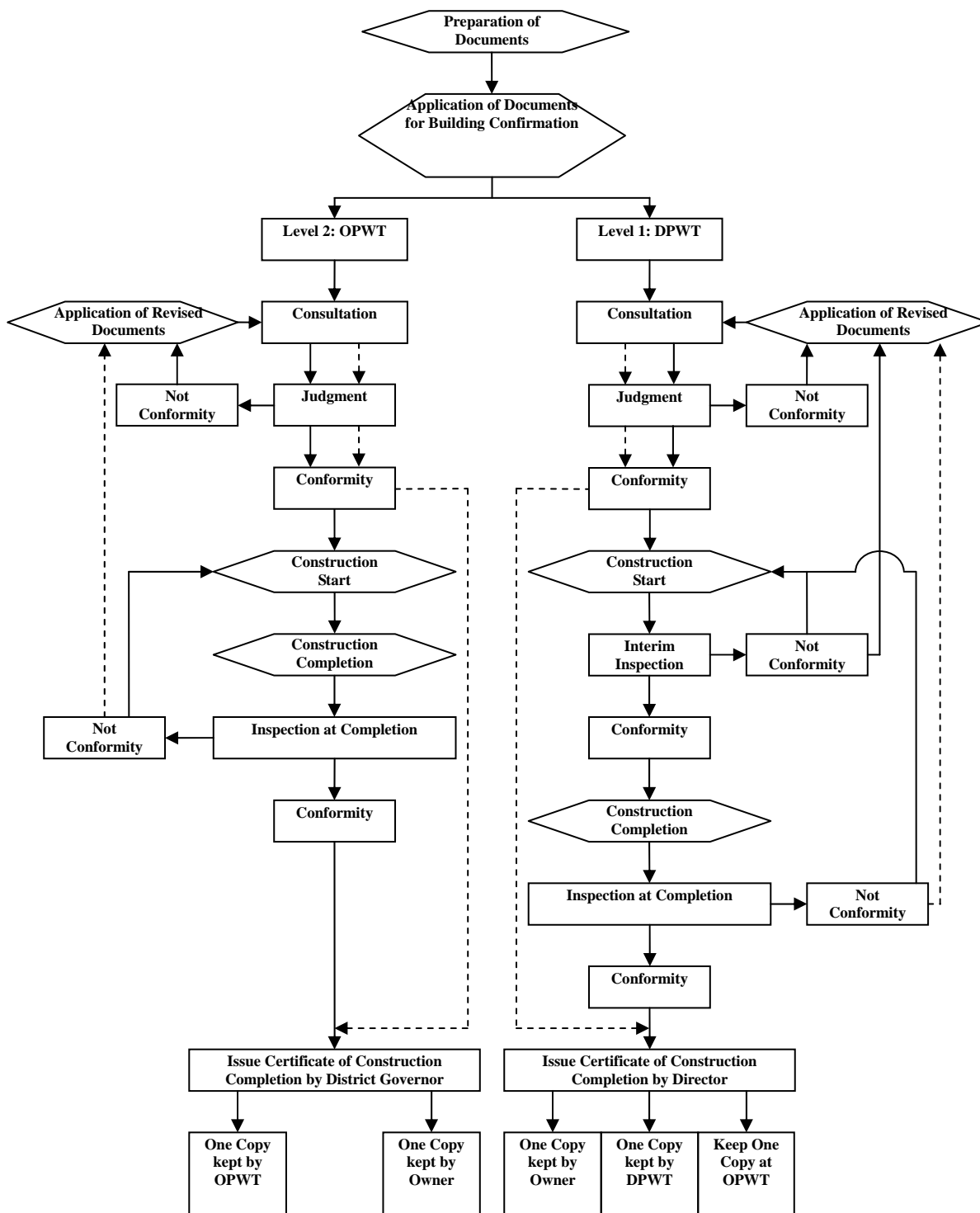
Source: Decision of the Minister of MCTPC on Building Management, Draft Decision of the Minister of MPWT on Building Control and JST

Tables 5.3.22 and 5.3.23 show construction activities of level 1 and 2 stipulated in Decision of the Minister of MCTPC.

Table 5.3.22: Construction Activities of Level 1

Level	Activity	Type	Total inside use area or volume	Height from the ground
Level 1	Land Excavation or Land Fill	Excavate or land fill for construction	Not excess 1,000 m ³	
	Big Repair	Repair, revise, change the usage	Not excess 200 m ²	Not excess 7 m
	Installation	Advertising sign in front of the shop		
	New Construction	All Type of Buildings		Not excess 200 m ²
- Small warehouse - Industry (Category 3) - All type of fences				
Level 2	Land Excavation or Land Fill	Excavate or land fill for construction	Excess 1,000 m ³	
	Big Repair	Repair, revise, change the usage	Excess 200 m ²	Limitless
	Installation	Big advertising sign along the road, antenna pole, electricity pole, telecom pole		
	New Construction	All type of construction buildings		Excess 200 m ²
- Big and medium size warehouse - Industry (Category 1 and 2)				

Source: Decision of Minister of MCTPC on Building Management



Source: JST

Figure 5.3.9: Flow from Building Confirmation to Certificate of Construction Completion

5.3.4 Human Resource Development Strategy

With respect to the human resources aspect of urban development management, a shortage of qualified personnel has been a major issue for years. There are several other issues has been raised as follows.

- Shortage of officials
- Insufficient technical personnel to follow the construction
- Lack of technical manual or guideline on urban planning and management
- Imbalance of professional field

(1) Shortage of Officials

This issue has been raised for years. Master Plan provided by Central (PTI) not Local Government (DPWT). Since 1991 PTI has been prepared more than 100 master plans by 11 people, average 5plans/year, which is overload. DPWT carries only 6 officials in charge of planning but no experience on provision of master plan. Regarding to VUDAA, Around 12 staffs in VUDAA manage 350km length of road and 280 buildings by 8 staffs in 2008, which is 35 buildings/ staff/ year.

(2) Insufficient technical personnel to follow the construction: Officials with Profession

Because of restructuring of educational system in Lao PDR in these 20 years, many officials with High Diploma, no college graduate, shows high technical and management ability on high and responsible position. Officials in younger generation holds high-end educational career. Regarding PTI (17% as female, out of 59 personnel as total), 71% of personnel are college graduates with their profession and 50% of these graduates hold master degree. 88.2% of DPWT officials (15.4% as female, out of 136 personnel as total) are High Diploma holder or College graduates. DHUP (25% as female, out of 56 personnel as total) also has 78% of college graduates. However, VUDAA has only 44.2% of officials with professional education and training, only 14.9% with professional education in college, although it is the frontline of technical management and implementation on site in districts. The training for officials and recruiting new in OPWT and VUDAA are strongly recommended.

Table 5.3.23: General Information of Human Resources of Major Organizations

Organization (Total Number of officials)	Ratio of Female Official (%)	College Graduates (Professional Education) (%)	Officials with Degree from Foreign Institute (%)	Professional Field (%)				
				Urban Planning and management	Engineering	Architecture	Transportation	Law
PTI (59)	17	71.2	45.2	15.2	32.9	22.8	1.3	0
DPWT (136)	15.4 (21.3 VTC)	32.4 (88.2 with High Diploma)	-	4.3	52.5	5.0	13.9	0
DHUP (56)	25	78	51.7	13.6	42.4	19.7	1.5	1.5
VUDAA (101)	17.3	14.9 (44.2 with High Diploma)	-	1.0	35.3	9.8	0	0

Source: "Statistic Government Official working with government organization for 2006-2007" by PTI,
 "Statistic Government Official working with government organization for 2009-2010" by DHUP
 "Statistic Government Official working with government organization for 2009-2010" by DPWT
 "Statistic Government Official working with government organization for 2007-2008" by VUDAA
 JST

(3) Lack of technical manual or guideline on urban planning and management

There are is an excellent manual of urban planning created by GTZ and it has been utilized in routine tasks especially in PTI. However, regarding to iii) there is no manual for technical officials especially of infrastructure management in district. It prevents them from improving their capacity on site. It is strongly recommended to formulate the manual for officials of OPWT and VUDAA.

(4) Imbalance of Professional Field

The professional field of the personnel in four (4) organizations varies more than 15 fields¹. Especially PTI shows its diversity due to the mandate as planning, consultation and research (Table 5.3.24). However, in general these organizations do not hold official in charge of Law. Regarding to present situation of legal framework for urban development and management the legal officers or new group or division of law is necessary.

Table 5.3.24: Professional Field of Personnel of PTI

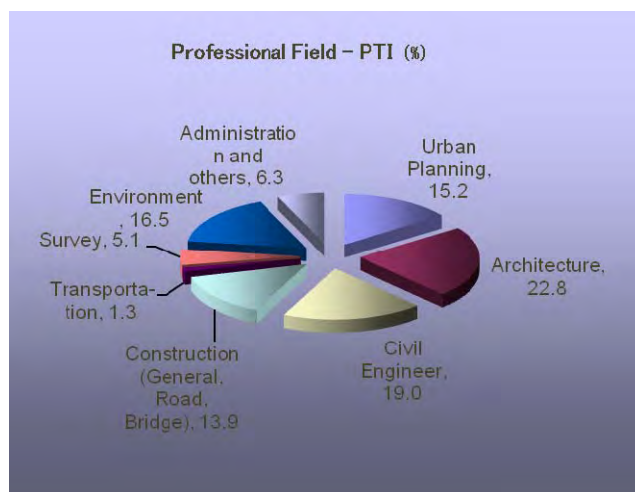
Professional Field	No. of Officials
Urban Planning	11
Urban Planning and Management	1
Urban Environmental Management	11
Architecture	18
Civil Engineering	14
Civil Engineering and Environment	1
Economic Construction	1
Road-Bridge	8
Road-Bridge Design	1
Bridge Design	1
Transportation	1
Hydrology	1
Survey	4
Statistic Planning	1
Accounting	2
English	1
Other	1

Source: “Statistic Government Official working with government organization for 2006-2007” by PTI

1) PTI as a national Think Tank

PTI as a national think tank shows fairly good balance of fields in general except Transportation Planning, in charge of which there is only one official. Transportation Planning is one of the key sectors in urban planning. Also as a national institute of planning and consulting, this imbalance in fields should be solved immediately. Generally PTI is short of personnel for planning work. Based on the interview, a single technical official is responsible for 3 to5 projects including drawing task. The diversity of professional fields hardly contributes to their planning task in this situation.

¹ A single official may hold several professions.

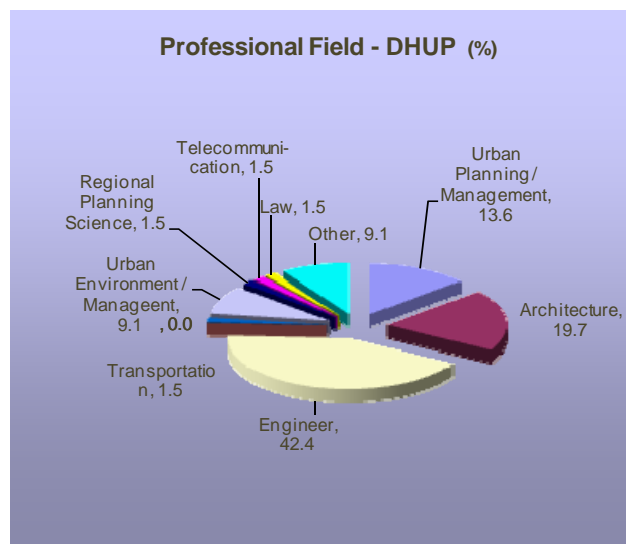


Source: “Statistic Government Official working with government organization for 2006-2007” by PTI

Figure 5.3.10 Balance of Professional Field of PTI

2) DHUP as a Policy Maker

As a Policy Maker of urban development and planning based on casting analysis of Figure 5.3.11, the situation of only 1 official with legal background in a department is insufficient for effective and sustainable implementation and management. Also same as PTI, there is only one official with Transportation Planning background. To play the role of policy maker and deal with planning and management, more officials with background of Law and Politics will be needed as well as Transportation Planning in the department itself.

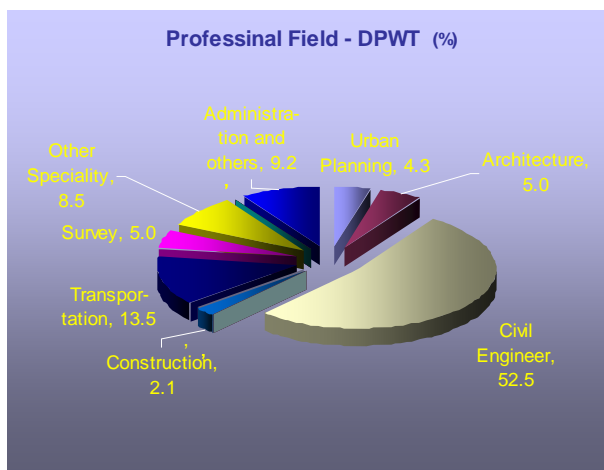


Source: “Statistic Government Official working with government organization for 2009-2010” by DHUP

Figure 5.3.11 Balance of Professional Field of DHUP

3) DPWT as a overall Planner and Manager

As a overall Planner and Manager of implementation, the situation of no official with legal background in a department is insufficient for effective and sustainable implementation and management. Other than that DPWT shows fairly good balance of professional field. It is more important for this department to deal with technical level on site. DPWT must supervise and guide OPWT to implement detail plan, manage private sector and monitor. And they must review the result of monitoring to improve plans and projects.

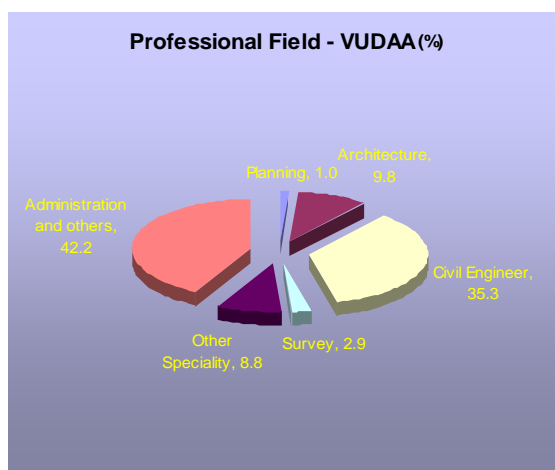


Source: “Statistic Government Official working with government organization for 2009-2010” by DPWT

Figure 5.3.12 Balance of Professional Field of DPWT

4) VUDAA as overall Planner and Manager

As a public service company VUDAA should be good at operation management with enough technical level to maintain on site.



Source: “Statistic Government Official working with government organization for 2007-2008” by VUDA

Figure 5.3.13 Balance of Professional Field of VUDAA

(5) Issue on Training in the past and Other Donors' Activity

The largest training program was held by ADB, which is as follows.

1) Advanced Urban Planning and Management Program (AUPM)

This program is the largest training which had been hold in 1998-2000 sponsored by ADB. The trainers were mainly invited from AIT for one term which was 9 months. The content of the course was as follows. The text and syllabus do not remain. However, officials who attended evaluated this program as useful and significant to improve their skill. Many officials mentioned that the similar program should have conducted in occasionally and continuously.

Table 5.3.25: Content of the Course of AUPMP for Urban Planning

Subject	Term (week)
Information Technology and Management	1
Introduction to Environmental Planning	1
Introduction to Market Economy	1
Context of Urbanization and Rural-Urban Relations	1
Concepts and Theory of Urban Planning I	1
Methods and Techniques of Urban Planning I	1
Concepts and Theory of Urban Planning II	1
Housing Development and Finance	1
Urban Strategies	1
Land Managing	1
Methods and Techniques of Urban Planning II : Urban Legislation	1
Public Policy and Municipal & Financial Management	1.5
Theory and Practice of Municipal Management	1.5
Public Policy and Urban Environment	1.5
Research Writing Seminar	1.5
Writing Consultation Seminar	1.5
Research Paper	7

Source: Certification by AUPM, 1999, from PTI

2) Individual Training Abroad for officials

Also around 50 % of officials of PTI and DHUP have an experience of study abroad. Most of them had been awarded scholarship by donors and the country or institutes which accepted them. Main country and institute to study in recent is Asian Institute of Technology (AIT) in Thailand, which accepts nearly 40% of younger generation of those personnel. Including other institutions half of those personnel (50%) have received the degree in Thailand. Next majority is Russia, 28%. 5 officials had received the scholarship from Japan, which major is Civil Engineering, Urban Planning and Environmental Management. Dispatch of individual officials for training abroad program has been held often in PTI as shown in the Table 5.3.26. Table shows the data in these five (5) years. In Japan 6 officials has been studied in the field of Environment, Urban Planning and Building Code. These officials are prospective candidate for Training of Trainers (TOT).



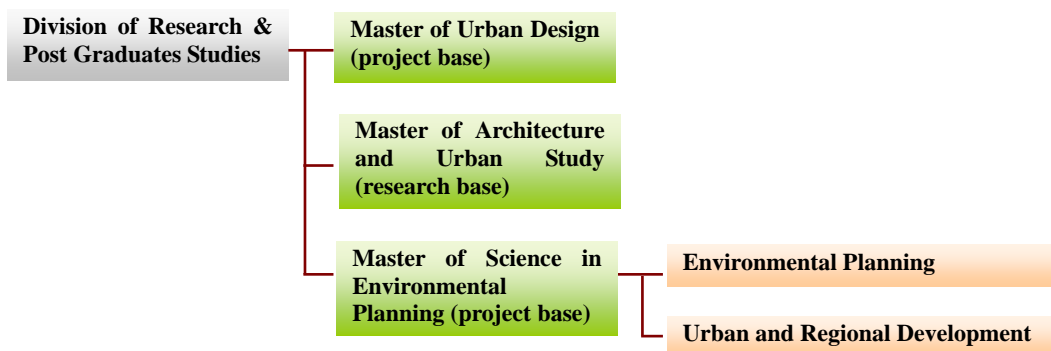
Source: “Statistic Government Official working with government organization for 2006-2007” by PTI,
“Statistic Government Official working with government organization for 2009-2010” by DHUP
JST

Figure 5.3.14: Country to Study Abroad of Personnel in PTI and DHUP

(6) Professional Education System in Lao PDR: Main Educational Institution - National University of Laos

National University of Laos (hereafter “NUOL”) is prospective major institute for technical officials in charge of urban planning. Also there is a large possibility of cooperation for effective education and training system for officials.

The Faculty of Architecture offers three courses of Master degree.



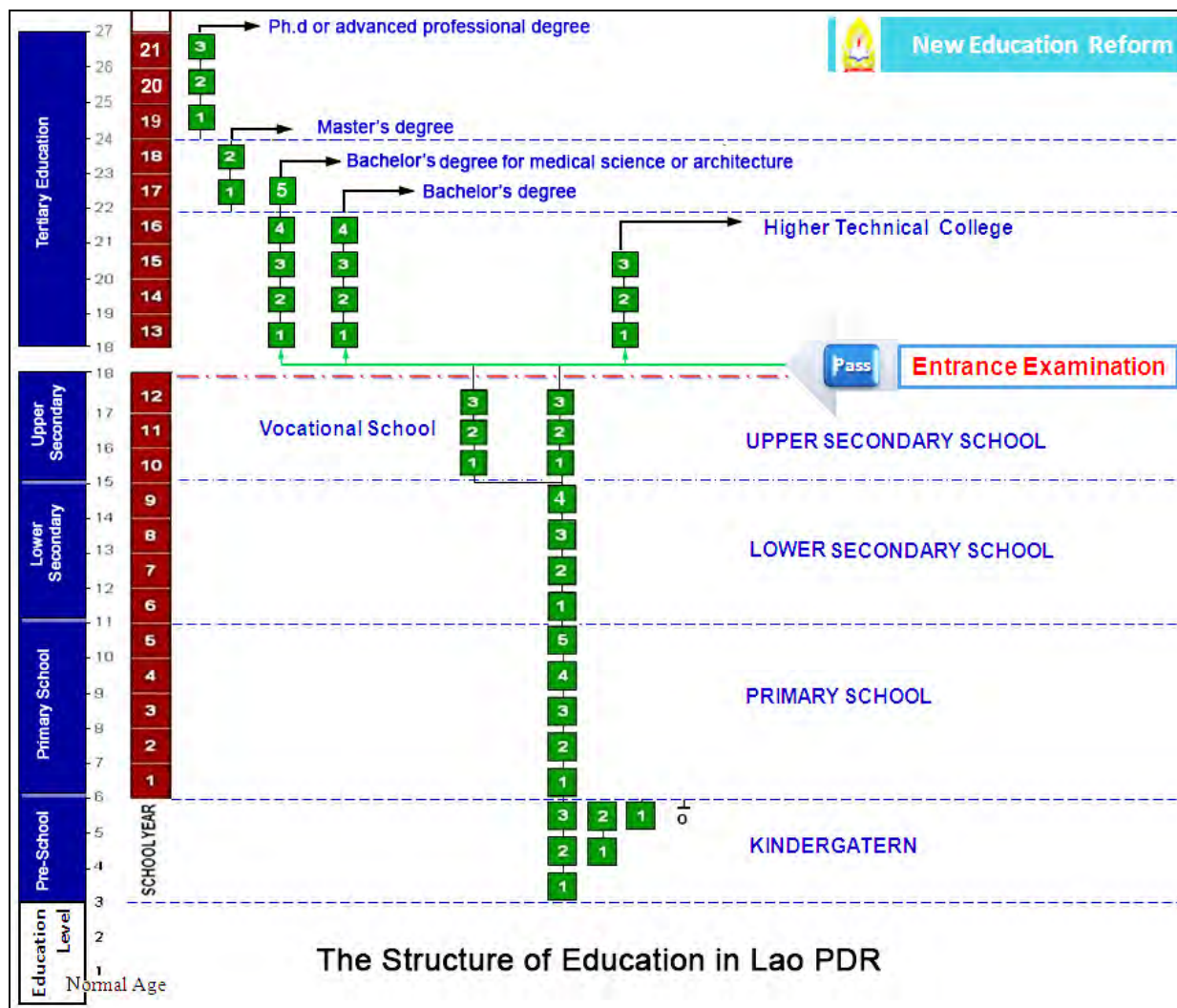
Source: Interview from the faculty of Architecture,
Division of Research & Post Graduates Studies of National University of Laos

Figure 5.3.15: Professional Program of NUOL related to Urban Planning

This program is the first course to offer the professional education of urban planning in Lao PDR established in 2008 by Japan’s support with expecting the first graduates this year. PTI is planning to have a couple of new officials. The program started with high expectation to produce promised young officials for the future of Lao PDR and keeps the high competitive situation for admission in their third year. 18 students are in their second year preparing their thesis. 11 faculties provide the lecture and studio class, most of whom are from DPWT and ALM. Students except one are from ministries and public institutions with a recommendation, whose average age is 35. The faculty is interested in establishing the stable program of study abroad and sent a mission to Malaysia, France and Japan. Last year they received the mission from Malaysia and France.

Also Faculty of Engineer with seven (7) departments with 5,861 students including Master and PhD has one individual campus. They are expecting 1,196 students to graduate next year.

As additional information Lao PDR has been working on formulating the educational system and set the education program finally. This will be start since 2011.



Source: National University of Laos, Faculty of Engineer

Figure 5.3.16: Structure of Education in Lao PDR

Table 5.3.26: Training for Individual Officials in Sectors

Title of Training Program	Term(days) .m/y-m/y	Age as a trainee	Professional Field of Trainee	Position as trainee (Position, Dept., Organization)	Position at present (Position, Dept., Organization)
Integrated Urban Planning (Sweden)	23/10/2007-21/11/2007	44	Urban Planning Management	Technical staff	Technical staff
Road Traffic Safety (Vietnam)	21-28/10/2007	40	Urban Environmental Management, Civil Engineering	Technical staff	Deputy Head of Planning and Cooperation Division
Poverty Reduction Through Rural-Urban Linkages of Secondary Towns in Least Developed Countries (Thailand)	6-7/12/2007	45	Urban Planning, English, Survey	Deputy Director of PTI	Deputy Director of DHUP
TOT for Gender Analysis on Urban Environmental Management	13-16/11/2007	45	31 Architect, Urban Environment Management 45 Urban Planning, English, Survey	Head of Personal and Administration Division	Deputy Director of PTI
Thai Physical and Land use Planning System (Thailand)	9-29/3/2008	51	40 Urban Planning, Architect	Head of Corporation and Information Division	Head of Corporation and Planning Division
Integrated Urban Planning (Guatemala)	23/10/2007-21/11/2007	45	Urban Environment Management, Architect	Head of Urban Engineering Division	Head of Urban Engineering Division
Environment Evaluation (Japan)	11/4/2008-07/6/2008	42	Urban Environment Management, Architect	Deputy Head of Town Planning Division	Deputy Head of Housing and Urban Planning Division
Urban Land Administration (Sweden)	2-26/9/2008	35	Rural and Regional Development Planning, Architect	Technical staff	Technical staff
Comprehensive City Planning (Japan)	26/8/2008-17/10/2008	49	Urban Environment Management	Deputy Head of Corporation and Information Division	Deputy Head of Urban Engineering Division
Industrial and Infrastructure Project Preparation and Appraisal (India)	7/9/2009-27/3/2009	27	Urban Planning	Technical staff	Head of Town Planning Section
Gender and Transportation (Thailand)	1-3/4/2009	42	Urban Environment Management, Civil Engineering	Deputy Director of PTI	Deputy Director of PTI
Urban Land Administration (Zambia)	14-29/3/2009	36	Urban Environment Management, Architect	Technical staff	Technical staff
Road Maintenance and Pavement Management System (Denmark)	1/9/-9/10/2009	43	RRDP, Architect	Deputy Head of Corporation and Information Division	Deputy Head of Urban Engineering Division
Comprehensive City Planning (JAPAN)	25/8/-16/10/2009	37	Urban Environment Management, Architect	Deputy Head of Town Planning Division	Deputy Head of Housing and Urban Planning Division
Executive Program in Logistics and Distribution (Singapore)	17-28/8/2009	42	Urban Environment Management, Civil Engineering	Technical staff	Head of Social Section
Urban Environment Management, AIT (Thailand)	13/8/2009-25/5/2010	35	Road-Bridge, Transportation, Urban Planning	Technical staff	Deputy Head of Housing and Urban Planning Division
Environmental Governance and Management in the Public (Switzerland)	9-20/11/2009	38	Architect, Urban Environment Management	Technical staff	Deputy Head of Planning and Cooperation Division
Training and Dialogue Programs on the Countermeasure Against Automobile Pollution in Urban Area (JAPAN)	23/9/-14/11/2009	35	Rural and Regional Development Planning	Deputy Head of Environment and Social Division	Deputy Head of Environment and Social Division
Integrated Housing Project (Malaysia)	22/10/-20/11/2009	37	Bridge	Technical staff	Head of Transport Section
Urban Environment Management, AIT (Thailand)	13/8/2009-25/5/2010	44	Urban Environment Management, Civil Engineering	Technical staff	Head of Social Section
Waste Water Treatment in Food Industry for CLMV (Malaysia)	9-20/11/2009	35	Urban Environment Management, Architect	Technical staff	Deputy Head of Housing and Urban Planning Division
Urban Environment Management, AIT (Thailand)	11/11-16/5/2010	28	Civil Engineering	Head of Engineering Section	Head of Engineering Section
Building Code and Control System (Japan)	16/5/-25/6/2010	34	Architect	Technical staff	Technical staff
Building Construction and Maintenance (Malaysia)	6/5/-4/6/2010	28	Architect, Urban Environment Management	Technical staff	Technical staff
Urban and Regional Development (Japan)	23/8/-9/9/2010	51	Civil Engineering	Technical staff	Technical staff
		53	Urban Planning	Deputy Director of PTI	Deputy Director of PTI
		43	Urban Environment Management, Architect	Head of Urban Engineering Division	Head of Urban Engineering Division
		37	Urban Environment Management, Architect	Deputy Head of Housing and Urban Planning Division	Deputy Head of Housing and Urban Planning Division
		43	Architect, Urban Environment Management	Head of Town Planning Section	Head of Town Planning Section
		43	Architect, Urban Planning	Head of Infrastructure Section	Head of Infrastructure Section
		34	Architect, Urban Environment Management	Technical staff	Technical staff
Climate Change and Green Energy Technology (Korea, Dem. Peo.)	20-29/10/2010	40	Architect, Urban Environment Management	Technical staff	Technical staff
Climate Change and Green Energy Technology (India)	25/10-12/11/2010	45	Civil Engineering	Deputy Head of Environment and Social Division	Deputy Head of Environment and Social Division
Urban Public Spaces and Governance (Indonesia)	23-31/10/2010	43	Road-Bridge	Head of Corporation and Planning Division	Head of Corporation and Planning Division
Urban and Regional Development Course (Singapore + Korea)	22/11/-17/12/2010	36	Urban Planning, Architect	Head of Town Planning Section	Head of Town Planning Section
		36	Architect, Urban Environment Management	Head of Housing Section	Head of Housing Section
		36	Civil Engineering	Head of Housing Section	Head of Housing Section

Source: PTI, DHUP and JST

5.3.5 Capacity Development Plan

The Study has two contents or stages which are to formulate the Master Plan for Vientiane Capital and to formulate the Implementation and Management Program for the Master Plan. Capacity Development Plan should be formulated for these two stages to be an integrated plan for development and management.

(1) General Goal of Capacity Development Plan and Target Capacity to be developed

Overall Goal of this stage of the Study is;

- to formulate the effective and sustainable implementation and management program for Urban Development Master Plan.

Therefore, Goal of Capacity Development Plan is;

- to develop and strengthen the capacity for effective and sustainable implementation and management of urban development master plan.

Also the general Target Capacity to be developed is;

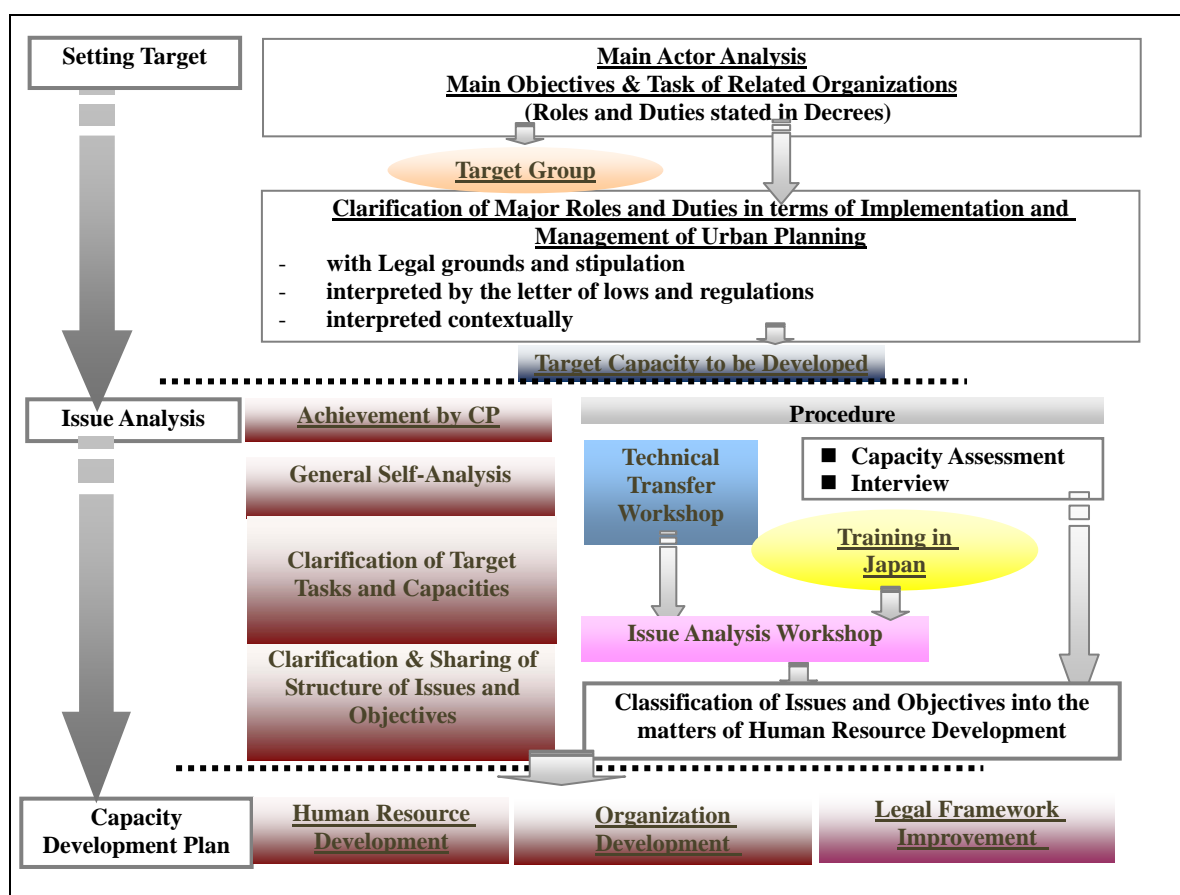
- to be able to formulate the effective and sustainable implementation and management program and plan for Urban Development Master Plan.
- to be able to implement the effective and sustainable implementation and management program and plan for Urban Development Master Plan.

Capacity Development Plan will be formulated by Study Methodology and Procedure as shown in Figure 5.3.17.

(2) Target of Capacity Development

According to the series of procedure of urban planning stipulated in Law on Urban Plans, The Regulation on Urban Planning, Decree on implementation and activities of UDAA, and other related laws and regulations, the main actors for city planning are PTI, DPWT, OPWT, DHUP, VUDAA, and National University of Laos as the main educational institutions. Also based on the analysis of Organization Strategy in 5.3.2, the target of Human Resource Development is;

- PTI
- DHUP
- DPWT – OPWT, and
- VUDAA



Source: JST

Figure 5.3.17: Study Methodology and Procedure of Human Resource Development Plan

(3) Initial Survey for Problem Findings

Based on interviews and questionnaires as initial survey major issues in general are summarized as;

- No or less control on inconsistent urban development management movement according to present master plan and land use zoning.
- Difficulties to implement infrastructure projects completely which have been planned.
- No implementation plan and system for socioeconomic development, which is based on the 6th 5-Year Plan of Socioeconomic Development for Vientiane Capital, coping with preservation and formulation of urban environment and urban design.

These two (2) major issues could be interpreted as follows.

- No or less concrete implementation and management system.
- No or less ability of concrete implementation and management and to deal with new system for new idea or criteria.

Regarding to system, analysis and plans have been proposed already in 5.3.2 and 5.3.3 and ability in 5.3.4 as Human Resource.

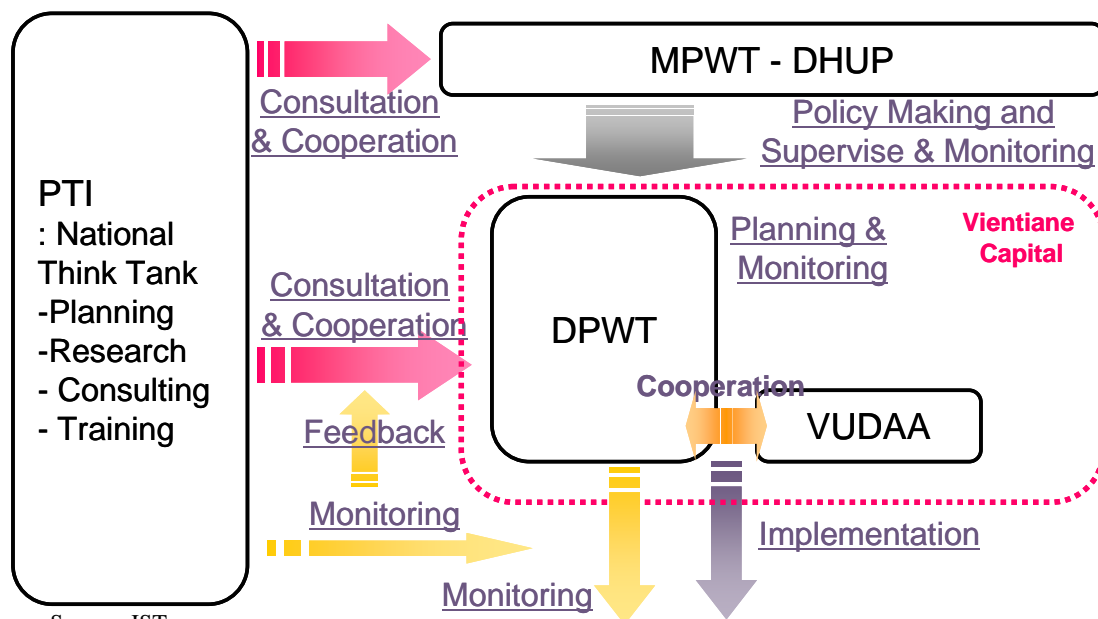
(4) Proposed Plan and Activity

Based on the analysis of problems and constraints two (2) categories have been set, system and ability. System consists of organization and legal framework. For these, basic concept and Capacity Development Plan has been proposed as follows. Formation Flow of Capacity Development Plan is shown in Table 5.3.28. Structure of Urban Development Management Program of Master Plan is proposed as Figure 5.3.19.

1) Activity-1: Initial Working Committee among Organizations

Working Committee among organizations should be set base on the relation and cooperation system of Figure 5.3.18;

- to establish the structure the Urban Development Management Governance of Lao PDR with cooperation of Faculty of Architecture, Engineering and Law in NUOL (refer to next 2))
- to make clear tasks and responsibilities in detail among each organizations.
- to share the result of monitoring.
- to share the scope of next stage.
 - PTI: a national Think Tank for planning and research, consultation and monitoring.
 - DHUP: Policy Maker to set the goal and fundamental plan and to supervise overall.
 - DPWT: detail planning and reviewing the result of monitoring from OPWT and feed back to planning, implementation and management.
 - OPWT: the frontline of implementation and management to implement the plan on site and to guide private construction companies. For this another important duty of OPWT is monitoring. This monitoring of OPWT will be fed back to DPWT and PTI and be the base of improved plans and implementation.
 - VUDAA: the public service company as stated in 5.3.2 Organization Strategy to be in charge of implantation, management and monitoring in a certain sectors.



Source: JST

Figure 5.3.18: Ideal Relation and Cooperation System among Related Organizations

2) Activity-2: Working Committee for Legal Framework

Working Committee for legal framework of construction and development among organizations and Faculty of Architecture, Engineering and Law in NUOL should be set to establish some new law and regulation, to make modern and complete legislative structure on urban planning and management and to improve existing law and regulation to be more clear, complete and easy to understand and can be implemented.

Especially Building Code has been an issue and submitted by PTI to be approved in this November. However, the contents are still general and not enough to be utilised in the practice. Therefore revise of building code is strongly recommended to be completed.

Working Committee for Legal Framework should be set to;

- revise Building Code and other related laws and regulations,
- set up the concrete Building and Development Permission System and procedure, and
- set up the National License System and procedure for architect and engineer

3) Activity-3: Recruiting and Training Plan of new graduates and mid-carriers in Related Organizations

Recruiting and Training Plan of new graduates and mid-carriers especially of the field of

- ransportation Planning,
- Urban Planning and
- Law.

4) Activity-4: Training System for OPWT and VUDAA Technical Officials

OPWT is the frontline of implementation and management to implement the plan on site and to guide private construction companies. They should have concrete practice technique and management ability of private construction practitioners.

Therefore the training for OPWT officers should be set up with the purpose;

- to formulate District Development Master Plan,
- to be able to maintenance urban infrastructure in a District with cooperation private construction companies, and
- to be able to manage private construction companies.

For this, three (3) training programs should be conducted based on the “Urban Planning Manual” with cooperation of NUOL with the contents of;

- i) Training Program and Manual for District Officer
 - Content: 5 District officials / year in PTI Training Program
- ii) Training Program and Manual for Private Construction Companies
 - Content: Monitoring and Guidance
- iii) TOT Program in PTI for above and for New Graduates

5) Activity-5: New Division for New Criteria

There is another issue that is no implementation plan and system for socioeconomic development coping with preservation and formulation of urban environment and urban design. There has been not much consideration paid to environmental and urban design. It is a good occasion with this 450 year anniversary to set up a new specialized division of urban design with younger officials. At the starting point new study working group or division of Urban Design and Landscape can be set in PTI with concepts of;

- Historical Preservation
- New Urban Design and Landscape
- Environmental Design

6) Activity-6: Working Group of Human Resource Development and Management in Private Sector

Accountability is one of the main concepts of Urban Development Management Governance. It will be realized by National License System of Architect and Engineer. There is no license system for architects and engineers in Lao PDR. Graduates with major in architecture and engineering in college put a name of architect and engineer to practice. In countries holding a license system college graduates need 4 to 7 years practice to get a license and practice by themselves. Excellent building code and other legal framework and management system are meaningless without professionals who can be trustworthy in terms of public safety. Formulation of national license system is strongly recommended to manage private sector. In this context a working group among related organization and NUOL should start to examine the ideal license system and methodology of management for Lao PDR.

The purpose of National License System is

- to improve the technical level,
- to stabilize the high standard of technical level,
- to disseminate the sense of accountability, and
- to establish the public awareness about accountability.

Tables below show examples of license system of other countries.

Table 5.3.27: International Comparison of License System of Registered Architect and Engineer

Country	Japan	USA
Name of Certificate	Registered Architect	Registered Architect
Legal Base	Individual Law	State Law
Organization of Accreditation	M of Education	NCARB (National Council of Architectural Registration Boards)
No. of Professional Field	—	—
Total No. of Registered Architect	329,500	130,000
Ratio vs Population (%) (2009)	0.26	0.04
Ratio of Successful Candidates (%)	20	22.5
Average Age of Successful Candidates	37.7	NA * Average No. of times to
Type of Examination	Paper / Drawing	Paper / Drawing
Job Experience prior to take exam. (years)	2 to 4	3 to 2 * 8 after graduation from high school in some states
Reregistration System		○ * Every 1 to 5 years depending on states
Affiliation with professional organization	Optional	Optional

Source: The Japan Architectural Education and Information Center, Ministry of Internal Affairs and Communication, Japan, JICA Study Team

Country	Japan	France	Germany	Singapore	Malaysia	Indonesia
Name of Certificate	Professional E.	I. Diploma.	Diploma I.	Professional E.	Professional E.	Professional E.
Legal Base	Individual Law	Individual Law	*National & State Law	Individual Law	Individual Law	Individual Law
Organization of Accreditation	M of Education	Engineer Title Committee	Institute of Engineering	M of National development	M of Public Works	Indonesia Engineer Association
No. of Professional Field	19	NA	22	6	26	11
Total No. of Certified Engineer	67,000	320,000	800,000	2,900	6,700	4,500
Ratio vs Population (%) (2009)	0.040	0.513	0.974	0.072	0.024	0.002
Ratio of Successful Candidates (%)	16	NA	NA	70 - 80	NA	NA
Average Age of Successful Candidates	43	24	27 - 30	NA	NA	NA
Type of Examination	Paper /	No	No	Paper /	Paper /	Interview
Job Experience prior to take exam. (years)	4 to 7	0 to 2	*including in education curriculum ○	0 to 5	3 to 15	3 to 8
Reregistration System			*only in Civil E.			NA
Affiliation with professional organization	Optional	Optional	Optional	Requisite	Requisite	Optional

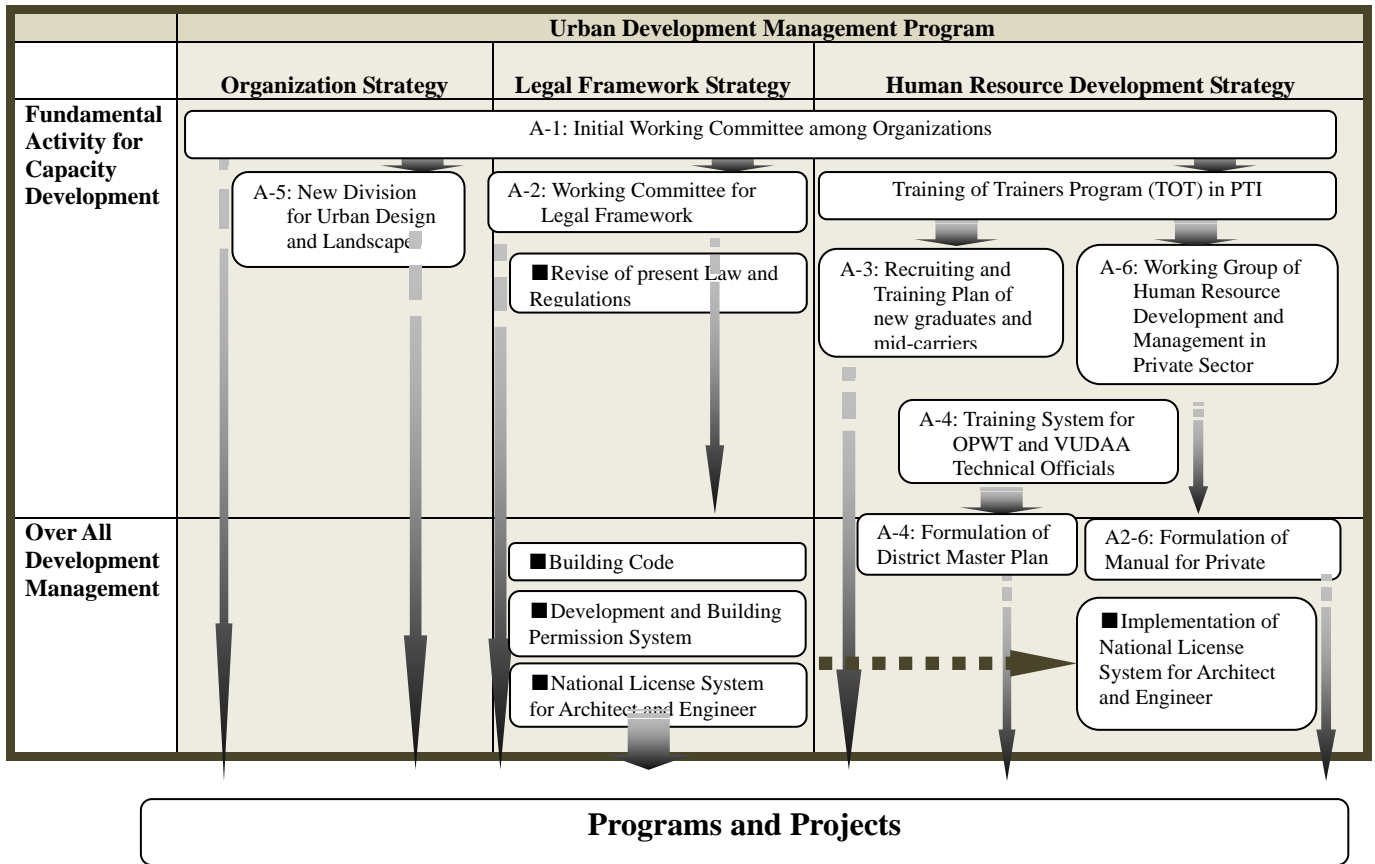
Source: The Institute of Professional Engineers, Japan, Ministry of Internal Affairs and Communication, Japan, JICA Study Team

Table 5.3.28: Formation Flow of Capacity Development Plan

Initial Issues	<ul style="list-style-type: none"> - No or less control on inconsistent urban development management movement according to present master plan and land use zoning. - Difficulties to implement infrastructure projects completely which have been planned. - No implementation plan and system for socioeconomic development, which is based on the 6th 5-Year Plan of Socioeconomic Development for Vientiane Capital, coping with preservation and formulation of urban environment and urban design. 				
	<p style="text-align: center;">System</p>			<p style="text-align: center;">Ability</p>	
	Organization	Legal Framework		Human Resource	
Causes	- No continuous coordination	<Legal Framework>	<Laws and Regulation >	- Short of number of officials	Few experiences of systematic team work

	between relevant organizations. Therefore, many organizations are managing and dealing with same task without well cooperation system.	Legislative structure on urban planning and management is unsystematic and incomplete.	Laws and regulations are unclear, hard to understand and show difficulties to be implemented or impossible to be implemented.	- Imbalance of professional Field	for planning project - insufficient technical personnel to follow the construction - Lack of technical manual or guideline on urban planning and management
Solutions	Formulation of General Scheme of Governance : Urban Development Management Governance			Recruiting	Training Program for Mid-careers with cooperation of Faculty of Engineering and Law in NUOL
	Clear determination of task of each organizations and good communication among them.	- establish some new law and regulation, to make modern and complete legislative structure on urban planning and management	- improve existing law and regulation to be more clearly, completely, easily to understand and can be implemented		
CD Plan	A-1 : Setting the Initial Working Committee among organizations; - to establish the structure the Urban Development Management Governance of Lao PDR with cooperation of Faculty of Architecture, Engineering and Law in NUOL, - to make clear tasks and responsibilities in detail among each organization, - to share the result of monitoring, and - to share the scope of next stage.	A-2 : Set working Committee for legal framework of construction and development to; - revise Building Code and other related laws and regulations, - set up the concrete Building Confirmation System and procedure, and - set up the National License System and procedure for architect and engineer.	- Revising Building Code - Set up the concrete Building Confirmation System and procedure - Set up the National License System and procedure for Architect and Engineer	A-3 : Recruiting and training plan of new graduates and mid-carriers especially of the field of -Transportation - Planning, - Urban Planning and - Law A-5 : New Division for New Criteria	A-4 : Training System for OPWT and VUDAA Technical Officials; - to formulate District Development Master Plan, -to be able to maintenance urban infrastructure in a District with cooperation private construction companies, and -to be able to manage private construction companies. For these; i) Training Program and Manual for District Officer - Content: 5 District officials / year in PTI Training Program ii) Training Program and Manual for Private Construction Companies - Content: Monitoring and Guidance iii) TOT Program in PTI for above and for New Graduates A-6 : Working Group of Human Resource Development and Management in Private Sector

Source: JST



Source: JST

Figure 5.3.19: Urban Development Management Program

5.4 Priority Program

To realize Urban Development Master Plan for Vientiane Capital, concept of Urban Development Management Program has been introduced in 5.1 in this Chapter and Program Approach to realize Master Plan has been explained with a long list of projects in 5.2. To ensure those projects to be implemented appropriately and successfully Urban Development Management Program has been analyzed and proposed as Strategies with Capacity Development Plan in 5.3.

In this section the first step of Master plan to be implemented will be proposed as Priority Program. Priority Program consists of projects on different stages and categories. Because Sub-program by Zoning has been proposed with Urban Development Management Program as a methodology to realize Master Plan, Priority Program should be set with component containing each element on each stage so that the program has a strategic flow from management program to implementation of each project.

5.4.1 Program Approach and Priority Program

Figure 5.4.1 shows Urban Development Management Program and all programs proposed and their relations. Urban Development Management Program, Organization Strategy, Legal Framework Strategy and Human Resource Development Strategy, will be the base of each Urban Development Management Sub-Program and ensure the fundamental capacity of each sector. These Urban Development Management Sub-Programs will ensure successful implementation of Sub-Programs by Zoning and their projects.



Source: JST

Figure 5.4.1: Structure of Program Approach

Based on this structure the three (4) programs have been picked up as Priority Program as follows.

- **Priority-program 1: Urban Development Management**
- **Priority-program 2: Urban Infrastructure Development**
- **Priority-program 3: Historic Area Conservation and Revitalization**
- **Priority-program 4: Sub-center Development**

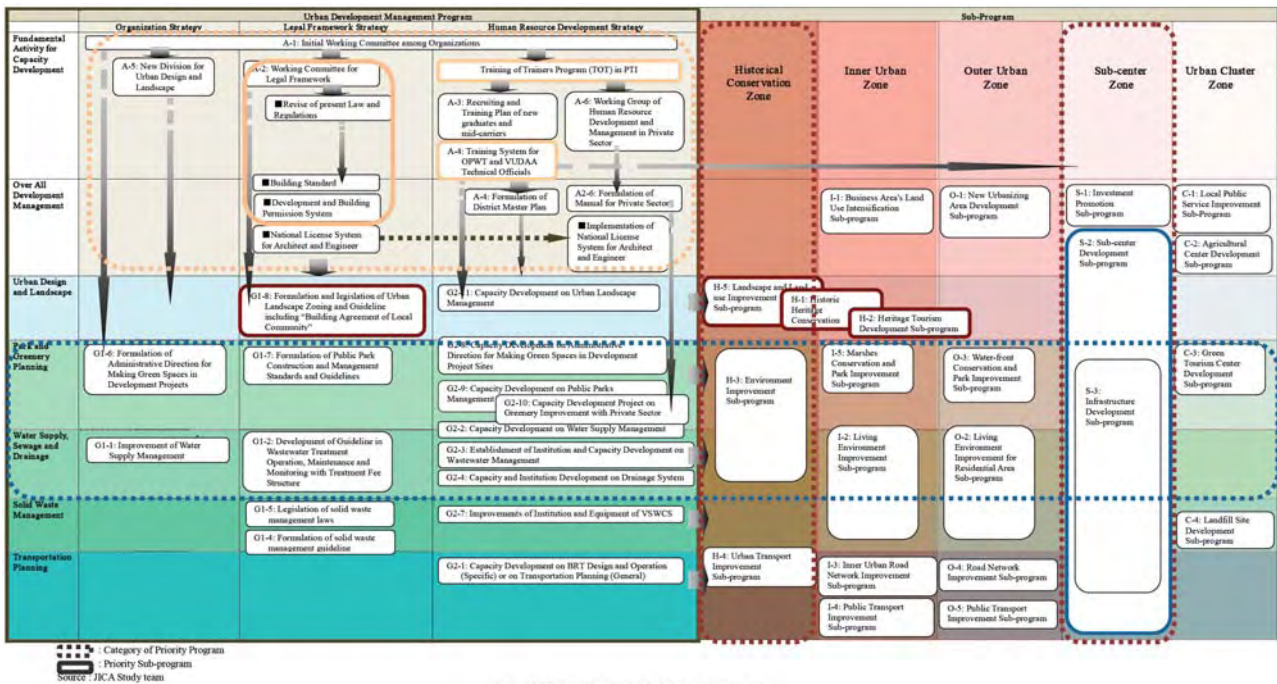


Figure 5.4.2: Program Approach and Priority Program

Source: JST

Figure 5.4.2: Program Approach and Priority Program

5.4.2 Priority Programs

Priority Program 1: Urban Development Management

(1) Vision and Objectives

- Improvement and Formulation of legal framework to give the fundamental guideline for all in charge both of development and management.
- Setting new system, guideline and standard to implement Development and Construction Governance.
- Sustainable implementation of urban development management.

(2) Program Contents

1) Revision on Law and Decree

i) Urban Planning Implementation Agencies at Provincial and District Level

JST proposes that MPWT or PTI should concentrate in preparing the urban plan of national and regional levels and DPWT should rather provide the urban plan of provincial and district level. Therefore, Article 9, 10, 34, 35 and 36 should be revised properly.

ii) Allocation of Urban Land in the Urban Plan

JST proposes more elaborate land use zones. Proposed land use zones should be revised and added in the Law and Order for prevailing among persons and authorities related to urban planning in Laos. Zones proposed can be selected considering characteristics of the urban planning target city or area such as history, culture, land use, development direction and urban structure. Each zone can also sub-divided into two to three sub-zones such as ZPP-Ua and ZPP-Ub or UAa, UAb and UAc.

iii) Building Standard

Establishment of the Building Standard is a key for building control and ordered urban development. Study on consolidation and adjustment of existing Ministerial Decisions on building and the Regulation of Zoning Control of Vientiane Capital and study on items and contents newly added should be conducted by DHUP of MPWT with help of DPWT and OPWT promptly. All the persons and companies related to building confirmation such as building owners, design companies, constructors and persons in OPWT and DPWT refer those Decisions and the Regulation for preparation of documents needed for building confirmation. It is complicated. These should be consolidated to one new Decision named the Building Standard. In addition, some new items and contents should be added in the Building Standard.

2) Formulation of New System for Urban Development Management

i) Development Permission System

Urban areas of Vientiane Capital are expected to expand toward the year 2030. It means that a number of large scale land developments such as residential area, industrial park, commercial complex and sport/recreation zone development will be planned and implemented in Vientiane Capital in the future. Therefore, land development management system is needed for orderly development of land in both urbanization promotion area and urbanization control area shown in the urban master plan. JST proposes a development permission system in Laos. Article on the development permit should be added in the Law on Urban Plan and the Order.

Table 5.4.1: General Work Flow and Organizations in Charge

Purpose	<ul style="list-style-type: none"> • To guaranty the purpose and function of land use, “Urbanization Area” and “Urbanization-restricted Area”, of the MP to prevent suburban area from disorganized urbanization. • To ensure favorable residential standard. • To apply the System to the area outside of the target area of the MP as well for orderly development. 	
	Contents	Organization and Agency in Charge
Deliberation and Preparation	- Procedure and contents	MPWT-DHUP, PTI, and DPWT of five (5) Provinces holding UDAA.
Permission of System	-	Minister of DPWT
Authorization of Amendment of Urban Planning Law	-	Prime Minister or National Assembly
Implementation	<ul style="list-style-type: none"> • Application reception, and liaison and coordination 	DPWT-Housing Urban Planning Office
	<ul style="list-style-type: none"> • Review 	DPWT (Transportation and Road & Water way), Electric Cooperation, Water Supply Cooperation, VUDAA, and other related organizations
	<ul style="list-style-type: none"> • Permission 	Provincial Governor

Source: JST

ii) Development Guideline

For the control and management of urban area to maintain good living environment, the development guideline, which consists of development criteria of public facilities and necessary matters concerning large scale land development activities, should be provided for promotion of public facilities development. Development criteria for provision of public facilities can be decided and provided by each province referring relevant Ministerial Orders and considering characteristic of geography and meteorology of each province. The Guideline will be applied to all development activities which requires development permit as proposed by JST to be stipulated in the Law on Urban Plan. Prior consultation required in the Guideline can be replaced by prior consultation for the development permit of the Law on Urban Plan. Drawings provided based on the Guideline can also be used for the development permit.

Table 5.4.2: General Work Flow and Organizations in Charge

Purpose	<ul style="list-style-type: none"> To prevent degradation of living environment by random development and delay of upgrading of public infrastructure by rapid population increase. 	Organization and Agency in Charge
Deliberation and Preparation	Contents	Organization and Agency in Charge
	<ul style="list-style-type: none"> - Management and technical standard of each public facilities - Procedure of development guidance 	MPWT-DHUP, PTI DPWT (Housing Urban Planning, Transportation and Road & Water way), Electric Cooperation, Water Supply Cooperation, VUDAA, and other related organizations
Authorization of Guideline	-	Governor of Vientiane Capital or Director of DPWT
Implementation	<ul style="list-style-type: none"> Application reception, and liaison and coordination 	DPWT-Housing Urban Planning Office (OPWT in future)
	<ul style="list-style-type: none"> Review 	DPWT (Housing Urban Planning, Transportation and Road & Water way), Electric Cooperation, Water Supply Cooperation, VUDAA, and other related organizations
	<ul style="list-style-type: none"> Permission 	Governor of Vientiane Capital or Director of DPWT (District Head in future)

Source: JST

3) Human Resource Development for Urban Development Management

To have urban development management take root in Laos for sustainable development, Human Resource Development Program should be implemented as Program simultaneously. Regarding to Development Guideline OPWT is the appropriate division to be in charge. However, deliberations of the System and capacity development are necessary for OPWT to be in charge. Therefore the System should be started by DPWT and other central and provincial divisions as implementation body and should be shifted to OPWT to be in charge in a phased manner. Contents and schedule of Training for OPWT should be considered in this manner.

Table 5.4.3: Purpose and Contents of Proposed Training

	Contents	
Purpose	<ul style="list-style-type: none"> • To be able to deliberate the contents of Development Guideline and Development Permission System. • To be able to conduct the Development Permission System and Development Guideline properly, checking and guidance of applicants, and • To understand Development Guideline and be able to guide private sector and other developers according to the Guideline (for OPWT officials). 	
Target	MPWT-DHUP, DPWT (Housing Urban Planning, Transportation and Road & Water way), VUDAA, PTI and other related organizations.	
Programs	Setting the Initial Working Committee among target organizations for implementation	<Member> MPWT-DHUP, DPWT (Housing Urban Planning, Transportation and Road & Water way), VUDAA,
	Schooling Program for committee member officials prior to the Deliberation and Preparation stage.	<Contents> - Urban Planning (General) - Urban Development Management Policy and Methodology (including study of Building Standard and Planned Development Design System) - Land Use Planning Policy and Methodology - Development by Private Sector, PPP, and other related methodology and factors, and - Other related subjects
	Training of Trainers Program (TOT) in PTI for training OPWT Officials	<Contents> - Urban Planning (General) - Urban Development Management Policy and Methodology (including study of Building Standard) - Land Use Planning Policy and Methodology - Development by Private Sector, PPP, and other related methodology and factors, and - Procedure of Guideline
	Training in Foreign Countries	
	Purpose	- to study the urban development management governance in the country. - to study the urban development permission system. - to study Development Guideline and Building Standard. - to study methodology of urban development management including Planned Development Design System.
	Term	- Training for Leaders : One (1) week - Training for Technical officials : Two (2) weeks
	Number of Trainee	- Training for Leaders : five (10) - Training for Technical officials : Ten (10)

Source: JST

(3) Implementation Schedule

Table 5.4.4: Implementation Schedule of the Priority Programs 1

Component	Contents	Term(2012-2015)	
Establishment of Implementation Body	Setting the Committee	■	
Revision on Law and Decree	Articles on Urban Planning Implementation Agencies at Provincial and District Level	■	
	Articles on Allocation of Urban Land in the Urban Plan	■	
	Building Standard	■	
Formulation of New System for Urban Development Management	Development Permission System	■	
	Development Guideline	■	
Human Resource Development for Urban Development Management	Basic Capacity Assessment	■	
	Training (Lecture and Technical)	Member of Initial Working Committee	■
		OPWT	■
	TOT	■	
	Training in Japan	■	
	Leaders	Leaders	★
		Technical Officials	★
Implementation Organizations	MPWT-DHUP, DPWT (Housing Urban Planning, Transportation and Road & Water way), Electric Cooperation, Water Supply Cooperation, VUDAA, PTI		

Source: JST

Priority Program 2: Urban Infrastructure Development

(1) Vision and Objectives

- Improvement of water supply condition to support the sustainable development in Vientiane Capital (VC) by enlarging WTP capacity, transmission and distribution network
- Improvement of wastewater and drainage condition for people in VC to provide clean water environment in public water and less flooding
- Awareness-raising for the importance of collection and reduction of generation and discharge
- Improve community collection system with their involvement in the built-up area
- Improve and promote sustainable urban development with wetland conservation for urban nature.

(2) Program Contents

1) Urban Transport Improvement

i) Primary Roads Improvement Project: NR 13

National Road 13 is an important trunk road that links Vientiane Capital with Vientiane province by south part and with Xaisomboun province by north part. However, there are some sections where the smooth flow of traffic is impeded by factors such as deteriorated surface condition, decrease of carriageway width, and encroachment. It is necessary to urgently remove these obstacles and provide sufficient capacity of road corresponding to the increase of travel demand.

ii) Public Transport Improvement Project

(i) Formulation of a Traffic Management Plan

Traffic management is one of transport policies to maximize capacity of the existing infrastructure. This policy aims to avoid the construction of new roads, and to promote public transport use, instead. Especially, in the CBD area traffic management could achieve effective solutions to traffic problems. However, any traffic management plan in accordance with urban development plan has not been studied yet. Therefore, the formulation of traffic management plan is necessary to be done urgently. The traffic management plan should contain the following issues of i) One-way street system, ii) Signalization of intersections, iii) Improvement of channelization and turning lanes at intersections, iv) Elimination of on-street parking, v) Traffic control signs and markings, vi) Pedestrian way, vii) Introduction of TDM policies, and viii) Establishment of a control center.

(ii) Introduction of route bus and park & ride system

A pilot project of shuttle bus service between the central bus terminal and National University of Laos was proposed as a priority project in JICA UTMP study and a feasibility study was conducted for this project in 2007. The technical cooperation project started April 2010 for the

implementation of the shuttle bus service according to the proposal. This project might provide parking facilities at the terminal of the route so that shuttle bus users can access to the service and park their cars and ride the shuttle buses. The introduction of the same bus and park & ride system as the above pilot project is also expected in the areas of CBD to Naxaithong on National Road 13N, to Thanaleng and to Tha Ngon on National Road 13S. These routes will be one that BRT is possibly introduced with an increase of public transport users.

(iii) Development of Car Parking

One of transport problems found extensively at present in the central area of Vientiane Capital is shortage of parking facility and results in illegal parking on the streets. Illegal parking not only decreases the capacity of a road section by occupying shoulders of the section but increases traffic accidents by blocking lanes for motorcycles and making them to weave in and out. Furthermore, the increase of passenger car use in the future can be easily predicted with the rapid increase of the number of registered vehicles. Therefore, the provision of parking space is an emergency measure against the congestion especially in CBD area. On the other hand, over-supply of parking space sometimes induces people to use vehicles and it causes traffic congestion in turn. Therefore, it is necessary to provide a minimum and efficient parking facility.

2) Water Supply Development

i) Urgent Water Supply Facility Development

Urgently WTP capacity development expansion is required as water shortage is happening this day and water demand is increasing steadily. It is expected to need additional WTP capacity with about 100,000m³/day till 2015. So, urgently feasibility study (FS) shall be conducted and implementation shall be carried out.

ii) Water Supply Facility Development

Water master plan in Vientiane was prepared in 2004 by JICA, but it is required to revise the MP identify locations and capacities of new or to enlarge WTP based on the latest WTP capacity and area wise water demand pattern. Also improvement plan of transmission and distribution pipes and reservoirs shall be established. Water supply facilities shall be developed based on the revised master plan.

iii) Improvement of Soft Portion

As capacity development on water supply management, it is required to develop a) improvement of NRW (Non Revenue Water), b) WTP operation work, and c) improvement of financial aspect to achieve proper water supply management.

As improvement of water supply management, improvement of financial condition is necessary to establish self supporting system by revising the customer registration categories and tariff system. It is necessary to carry out public awareness program to water users in order to receive the consensuses. NPVC shall have coordination with WSRC/WaSRO, WSD in DHUP, DPWT and water users.

3) Wastewater and Drainage Development

i) Urgent Wastewater and Drainage Facility Development

On-site and communal (decentralized) systems or Community Based Sanitation (CBS) is favorable in a short and medium term considering financial and technical point view. According to the Study on Improvement of Water Environment in Vientiane City, at least 805 units of small CBS system together with 3 In-stream water treatment system were proposed in urban Vientiane area.

Capacity and efficiency of drainage system shall be expanded if it is inadequate and causing flooding. Improvement of open ditches is necessary where they are used as pedestrians.

ii) Improvement of Soft Portion

(i) Establishment of Institution, regulation and Planning

This day, VUDAA is taking service to remove septage from septic tanks of households by taking and discharging to septage dumping site. But there is no proper organization and regulation to handle overall wastewater management including preparation of the master plan.

Organization, regulation and master plan for wastewater management shall be established or improved, coordinating with DHUP, WREA, VUDAA, NPVC and others. It is necessary to carry out public awareness program to establish fee structure on wastewater management as same as water management.

(ii) Controlling Land Development

At present regulations of land use and land development is not done properly, so land development shall be regulated not to increase run off by urban development that lead to high potential of flooding. Especially conservation of marsh is important to maintain the retention function in reducing flooding as well as natural wastewater treatment function.

4) Solid Waste Disposal Improvement

i) Community awareness campaign for sanitary solid waste discharge

From a viewpoint of solid waste generation and discharge for improving and maintaining sanitary living environment for the residents, the urgent issues to be addressed are on unclear discharging rules and enforcement, low awareness level of citizens to the solid waste treatment, litter, burning and illegal dumping. Results of the social survey also say that the respondents answered the same main problems, and give higher priority on waste management measures through self-reliant efforts (voluntary actions) by citizens and communities, environmental education, regulations and public awareness for waste discharge. These results show that they are generally prepared to accept the awareness-raising activities.

In this context, an awareness campaign of domestic solid waste management is appropriate for a priority program to enlighten local residents in terms of the importance of solid waste collection (the collection service can maintain sanitary living environment) and of environmental education. Main components of the program are proposed as Table below.

ii) Construction of community collection points

In some of the urban areas in VC, collection service is not provided due to poor accessibility, such as narrow, bad surface, not paved roads in the viewpoint of the waste collectors. Meanwhile, 61% of the respondents of the social survey who are not receiving waste collection service answered they want to use the collection service. However, road improvement takes long time to complete. Thus public collection points shall be provided at locations with better accessibility in each community. Main components of the program are proposed as Table below.

Table 5.4.5: Contents of Construction of Solid Waste Disposal Improvement Project

Items	Contents
(i) Community awareness campaign for sanitary solid waste discharge	<ul style="list-style-type: none"> - Garbage collection events involving young people, - Clean community competition (especially for garbage bin and around the collection points) and creation of a clean-up slogan from the public, and - Seminar for dissemination of solid waste management manuals (discharging rules) to promote sanitary discharge, education of environment and sanitation
(ii) Construction of community collection points	<ul style="list-style-type: none"> - Study and selection of the public collection points, - Constructions of the public collection points, and - Workshops to make the system involving communities, studying where is the best place, how resident carry solid wastes there, and rules of discharge and maintenance at the collection points

Source: JST

5) Marshes Conservation and Ecological Parks Improvement

i) Survey on Existing Marshes Conditions

In the urbanized area with rapid growth, some marshes still remain in a good condition according to the result of brief survey conducted by JICA Study Team. It is highly recommended to conserve marshes which have some important effects, such as retaining water, purifying water quality, and to establish an ecological public parks making use of the good natural environment for citizens' relaxation in the Capital city. The conservation of the marsh to use as an ecological public park is expected to generate some positive effects for urban areas stated in the Table 5.4.6. It is therefore proposed to conduct a detailed survey on existing marshes conditions such as the marshes' area, water quality and quantity, fauna and flora, ownership, development activities, and so on, in order to grasp which marshes should be conserved and made use as public parks.

Table 5.4.6: Positive Effects of the Marshes

Items	Contents
Positive Effects to be given originally	<ul style="list-style-type: none"> - Purifying water quality - Controlling flood disaster by adjusting water levels - Conserving wildlife habitats
Positive Effects to be given as an ecological public park	<ul style="list-style-type: none"> - Providing a relaxation space for citizens - Providing a round-the-marsh trail - Improving accessibility for surrounding areas - Providing comprehensive recreation facilities

Source: JST

ii) *Establishment of Ecological Marsh Parks (Nong Chan Marsh, etc.)*

(i) *Planning for establishment of ecological marsh parks*

Based on the result of survey on existing marshes in urban area, it is proposed to set up a establishment plan of ecological marsh parks project, and establishment of ecological marsh parks shall be conducted under the plan.

(ii) *Establishment Proposal of Nong Chan Ecological Marsh Park*

Nong Chan Marsh is one of the few marshes remaining with good natural conditions in urbanized area of Vientiane Capital. The site belongs to Sisattanak district and is “UAa” of land use zoning. Most of the land is owned by the government, while some part is owned by private party. This private owner does not have intention to have the marsh totally developed by investors. The area of the marsh is approximately 3.5ha, and the total area including the surrounding green area is 8.5ha. The length of surrounding extension around the marsh is approximately 1.4km. It is proposed the following components for creating “Nong Chan Ecological Marsh Park” by conserving the marsh.

Table 5.4.7: Contents of Establishment of Ecological Marsh Parks Project

Items	Contents
Making Natural Conditions	- Greenery (large, middle and small trees, shrub, flowers and emergent plants to purify the water)
Furnishing Park Equipments	- Pedestrians’ wood deck (with a total length of 1.4km) - A small bridge (to connect between north and south sides) - Park equipments (benches, small arbors, toilets, lightings, signboards, name plates of main trees, parking lots, etc.) - Service facilities such as restaurants and shops arranged by private finance such as PFI (Private Finance Initiative) method

Source: JST



Source: JST and Quick Bird for base map

Figure 5.4.3: Current Conditions and Rough Future Image of Nong Chan Marsh

(3) Implementation Schedule

Table 5.4.8: Implementation Schedule of the Priority Programs 2

Component	Contents	Short (-2015)	Mid (-2020)	Long (-2030)
Urban Transport Improvement				
(1) Primary Roads Improvement Project	1) Improvement and completion of NR 13			
(2) Public Transport Improvement Project	a) Formulation of a Traffic Management Plan			
	b) Introduction of route bus and park & ride system			
	c) Development of Car Parking			
Related Organization	PTI, DPWT, VUDAA, VC			
Water Supply Development				
Urgent Water Supply Facility Development	Planning Stage			
	Implementation Stage			
Water Supply Facility Development	Review of Water Master Plan			
	Note: till 2015, it is same as urgent water supply facility development			
Improvement of soft portion	Capacity Development on Water Supply Management			
	Improvement of Water Supply Management			
Related Organization	NPVC, DHUP, DPWT			
Wastewater and Drainage Development				
Urgent Wastewater Facility Development	On-site, communal systems or Community Based Sanitation (CBS)			
Improvement of soft portion	Establishment of Institution, regulation and Planning			
	Controlling Land Development			
Related Organization	NPVC, DHUP, DPWT			
Solid Waste Disposal Improvement				
Community awareness campaign for sanitary solid waste discharge	Garbage collection events involving young people			
	Clean community competition and creation of a clean-up slogan from the public			
	Seminar for dissemination of solid waste management manuals, education of environment and sanitation			
Construction of community collection points	Study and selection of the public collection points			
	Workshops to make the system involving communities			
	Constructions of the public collection points			
Related Organization	VUDAA, VSWCS, WREA, MOH, VC			
Marshes Conservation and Public Parks Improvement				
i) Survey on Existing Marshes Conditions				
ii) Establishment of Ecological Marsh Parks	(i) Planning for establishment of ecological marsh parks			
	(ii) Establishment Proposal of Nong Chan Ecological Marsh Park			
Related Organization	PTI, DPWT, DHUP, VUDAA, VC			

Source: JST

Priority Program 3: Historic Area Conservation and Revitalization

(1) Vision and Objectives

- To set targets and formulation of measures to realize the urban landscape improvement and sustainability of national heritages and urban heritages for sustainable urban development.
- To set targets and measures to enhance participation of local communities and citizens to create calm and beautiful urban scenery in Vientiane Capital.
- To enhance and motivate awareness of heritages conservation on local communities through earnings of additional family income based on International Heritage Tourism Development.

(2) Program Contents

1) Registration of the Part of Identified Urban Heritage

The Part of Identified Urban Heritages (building and tree) in ZPP-Ua should be registered as a Local Level of National Heritage on the National Heritage Law through implementation of Capacity Development Programs to the related government agencies and stakeholders in the zone.

Table 5.4.9: Criteria and Contents

Items	Contents
Component	- Coordination of categories of identified urban heritages to be registered as local level of National Heritage between the related Government Agencies - Registration of Local Level of National Heritage on Vientiane Capital by DIC under guidance of MIC
Guideline	Coordination and formulation of preservation guidelines for registering local level of national heritages
Public Outreach	Public announcement, hearing and coordination of proposed local level of national heritage and preservation guideline with subsidy system for local communities and stakeholders

Source: JST

2) Sub-Zoning of ZPP-Ua for Historic and Traditional National Heritage Conservation

i) Formulation of Sub-Zoning Plan with Guidelines

Formulation of Sub-Zoning Plan with Guidelines to conserve historic and traditional urban landscape on surroundings of the registered national and local levels of national heritages under coordination with local communities in ZPP-Ua is proposed. Approaches and methodologies of Sub-Zoning will be able to be transferred through OJT of Sub-Zoning Study to the responsible government agencies for formulation and execution of Sub-Zoning Plan. Contents of zoning are stated as below.

Table 5.4.10: Criteria and Contents of Sub-Zoning and Guideline

Zone	Contents
“Core Sub-Zone”	To cover a compound of the registered national heritages for to preserve value of heritage itself.
“Buffer Sub-Zone”	To cover properly the surroundings of “Core Sub-Zone” based on a visibility analysis to conserve the identified historic heritage, and also to conserve historic and traditional urban landscape and streetscape surrounding “Core Sub-Zone”. Limited scale of supporting and service function for Core could be located and developed in the sub-zone.
“Development Su-Zone”	To cover the outside the “Core” and “Buffer Sub-Zones” for efficiently and properly utilization heritages for instance international /or domestic heritage tourism industrial development purposes.
Draft Guidelines	
Purpose	To preserve “Core Sub-Zone”, to conserve historic and traditional urban landscape in “Buffer Sub-Zone” and balanced conservation and harmonious tourism development in “Development Sub-Zone”.
Contents Field	<ul style="list-style-type: none"> - 1- building set-backline and utilization/landscaping set-back area, - Building façade (height, floor height, material, color, and design vocabulary), and - Billboard (location, size, materials, back light, and color)

Source: JST

ii) Public Hearing and Modification of Sub-Zoning Plan

To get smooth understanding and acceptance for Sub-Zoning Plan from local community, this sub-component is proposed to coordinate timing with the component-3: International Tourism Development Plan for ZPP-Ua. On this sub-component, capacity will be able to develop through steps as follows,

Table 5.4.11: Criteria and Contents Sub-Component-2

Items	Contents
Component	<ul style="list-style-type: none"> - Presentation and explanation of Draft Sub-Zoning and Guidelines for local communities and stakeholders in ZPP-Ua. On the presentation, draft international tourism development plan is proposed to explain to local communities. Detail explanation, regarding “how sub-zoning will contribute to keep sustainability of tourism resource management and tourism development in the future, is proposed for local communities. - Stakeholder Meetings by each street community. Private opinion of each stakeholder has to be collected and compiled by questionnaire survey. And workshops have to be organized for discussion of future conservation and development by each street community /or tourism industrial sector (accommodation, restaurant/coffee shop, shops/souvenir shop, tour agent/operator, resident community, etc) - Public Announcement and Legislation of Finalized Sub-Zoning Plan with Guidelines
Plan and Guideline	Modification of Draft Sub-Zoning Plan and Guidelines to incorporate opinions and comments from local community
Public Outreach	Stakeholder Meetings with each street community to coordinate and finalize Sub-Zoning Plan and Guidelines

Source: JST

3) Formulation of International Tourism Development Plan for ZPP-Ua

In the zone ZPP-Ua, traditional commercial center function has been steadily changing to international tourism destination based on the remaining historic and traditional heritages and urban landscape as tourism resources in the zone. Under the condition, local communities and tourism industries in the zone well understand the consequences between conservation

and utilization of potential historic and traditional tourism resources as to establish an international tourism destination and for the future. Sustainable International Tourism Development Plan is proposed to formulate through a participatory approach of motivated local community.

Table 5.4.12: Criteria and Contents

Component	Contents
(i) Questionnaire Survey for Local Stakeholder in the ZPP-Ua	Questionnaire Survey local stakeholders such as tourism related establishments and resident families is proposed to define and understand the current situation to participate to tourism industries and their opinions and expectation for future tourism development in the zone. Questionnaire has to include items as follows, <Questionnaire> a) Condition and issue of household and establishment (members and employment) b) Condition and issue to participate tourism industry (type of accommodation, restaurant/coffee shop, souvenir shop, tour agent/operator, other tourism related industry) c) Situation to understand potential tourism resource and consequences between international tourism development d) Opinion to protect national heritage and to conserve urban landscape for future e) Opinion to participate to tourism industries in the future f) Compilation of results of questionnaire survey by each street community
(ii) Identification of existing and potential tourism resources	The existing and potential tourism resources have to be identified and compiled in the zone based on the result of questionnaire survey and community workshops.

Source: JST

i) To Set-up Tourism Development Direction and Products

Tourism development direction and product development ideas are proposed to identify by workshop programs of local community as follows,

- a) Identification and compilation of development ideas of new tourism product are required on the identified potential tourism resources and the existing tourism products by local residents and tourism establishment.
- b) Based on the formulated future tourism products, future Development Direction of International Tourism in the zone has to be formulated for establishment of heritage tourism destination through organizing workshop programs by local community.

ii) Tourism Development Plan by Public and Private Collaboration and Partnership

Based on the results of Sub-Component-3.3, actual improvement and development plan has to be discussed and formulated on the steps as follows,

Table 5.4.13: Implementation Step

Zone	Contents
Public Road and Infrastructure improvement	<ul style="list-style-type: none"> - Road design for safety and comfortable conditions for tourist, - Design and selection of materials and colors for road pavement and facilities to harmonize with historic and traditional urban landscape (carriage way, pedestrian, road markings, traffic signal, traffic sign, street light, street furniture, street tree) - Design for other facilities on road (removal or underground overhead cables, bus-stop shelter, billboards etc)
Roadside Set-back Area and Façade Improvement for Building Agreement	<ul style="list-style-type: none"> - To keep building set-back line - To integrate public pedestrian space and semi-public set-back space - To harmonize landscape design on public and semi-public spaces - To make harmonized streetscape: building façade design with historic and traditional streetscape (height, floor height, design vocabulary, material, color) and billboard design

Source: JST

iii) To promote “Building Agreement of Local Community”

For sustainable tourism development and tourism resources management in the zone, self-reliant historic and traditional urban landscape conservation through “Building Agreement of Local Community” system will be required for more effective international heritage tourism development plan to the international tourism market. Building Agreement is not only proposed to control building façade but also, to control billboard and landscaping on each frontage set-back area to create harmonized traditional streetscape as for international tourism destination. Through the implementation of the sub-components, technology and know-how for formulation and management of historic and traditional urban landscape will be able to transfer through OJT program to the related government agencies such as DIC, DHUP, DPWT, OPWT, and PTI but also it will strengthen local organizational structure for conservation and tourism development.

4) Implementation of Model Project of Historic Zone Conservation and Revitalization

Implementation of model projects of the above sub-component-3 of International Tourism Development Plan is proposed to enhance and motivate local community for awareness and conservation of historic and traditional urban landscape through the steps as a) Selection of Model Project, b) Design and formulation of Implementation Plan, c) Implementation of Model Project, and d) Establishment of Building Agreement for Model Project Area.

(3) Implementation Schedule

Table 5.4.14: Implementation Schedule of the Priority Programs 3

Component	Short (-2015)
Establishment of Implementation Body	
Registration of the part of Identified Urban Heritage	
Sub-Zoning of ZPP-Ua for Historic and Traditional National Heritage Conservation on the National Heritage Law	
Formulation of International Tourism Development Plan for ZPP-Ua	
Implementation of Model Project of Historic Zone Conservation and Revitalization.	
Related Organization	DIC, MIC, Vientiane Capital, DPWT, DHUP, and PTI

Source: JST

Priority Program 4: Sub-center Development

(1) Vision and Objectives

- Managing new urban growth for the future
- Leading appropriate development with improvement of Sub-center

(2) Program Contents

1) Establishment of Implementation & Coordination Body

Urban planning, in particular urban master plan, is under the jurisdiction of PTI under MPWT. PTI is responsible for preparing urban development master plan for all cities in Lao PDR including Vientiane, but there is no arm to carry out or implement the projects under the master plan because actual development projects shall be done by implementation agencies.

DPWT is the one who take care of infrastructure and utility development in Vientiane Capital including building permission based on the urban planning as well as building code. DPWT did not have any urban development project before, but currently expands the capacity to urban development project by taking care of some urban development projects along 450 Years Road.

Since PTI has an authority to take care of urban planning and has experience of urban planning and site planning with numbers of staffs. On the other hand, the DPWT has experience in infrastructure development from design stage to execution stage. Since the sub-center development will be very big national project, it should be a principle that implementation and coordination body is to be organized under full utilization of all capable staffs available in PTI and DPWT.

i) Planning Stage

It is proposed to set up a special planning unit which dedicates sub-center projects. The staff of the planning unit should be selected from PTI and DPWT. Vientiane Capital as well as the MPWT should jointly organize a steering committee to direct the unit.

ii) Implementation Stage

DPWT of Vientiane Capital will be the implementation body of the sub-center development projects. Housing and Urban Planning Office under the DPWT is responsible for urban planning, however, the office does not have the section responsible for urban development project. It is desirable to designate “Construction Section” (tentative name) to take care of sub-center development. The section will be responsible for the following tasks which are substantial work for the sub-center development:

- Design
- Land acquisition

- Development of center zone
- Concession management
- One stop service regarding private investors

2) Planning for Implementation Scheme under PPP

Lao Government in general speaking has limited investment budget. Since the sub-center development requires huge amount of investment, it must be difficult for Lao Government to bear necessary investment cost alone. Accordingly, it is of great necessity to adopt financing scheme of public private partnership to minimize public investment as well as to realize desirable urban functions and physical development of sub-centers. The sub-center development should be done with PPP scheme due to limited public investment capacity. The government sector mainly take care of minimum basic infrastructure and center zone development, while the private sector shall take care of other remaining developments including infrastructure and utility development. For this purpose, the following actions should be taken by the private sector:

i) Investment Promotion

(i) Incentives for investment-Designation as SEZ

Land development at sub-centers would be a risky project for private sector. It is necessary to provide with certain privilege to the private investor who makes investment at the sub-center areas to offset the risk in certain extent. In this sense, application of special economic zone (SEZ) is one option. The sub-center areas shall be designated as SEZ under SEZ law to provide with income tax reduction, import and export tax exemption etc.

(ii) Provision of Extra Land to equivalent with Infrastructure Development

Private sector shall take care of most of land development in the sub-centers under PPP scheme. Most of infrastructure development shall be done by the private investors too. To reduce the burden of infrastructure development cost, it must be indispensable for Lao Government to consider providing with extra land instead of infrastructure development.

(iii) Linkage with other development projects

Some sub-centers have certain development projects like Vientiane Logistics Park (VLP) development project in Thanaleang sub-center, Vientiane Industrial Park (VIP) project in KM 21 sub-center. These projects are in the stage of financial arrangements, so that the investment of those projects will be separately done. Those development projects normally include support infrastructure and utility development, and generate employment. It generates demand of residential development in the sub-center. It contributes to reduce a risk of investment or even to generate business chance of private investment. In addition to this, it is also positively works to reduce infrastructure cost. Accordingly, it is preferable to coordinate the implementation schedule between sub-center projects and other development projects in the sub-center.

ii) Core Area Development

The center zone development is another of importance to formulate the sub-center to designate area of the sub-center, which has not only the functions of commerce business, transport hub

and public services in the sub-centers but also functions of attractiveness of residential development by improving the image of the area with good urban design and landscape. It will contribute for private investors to be positive in considering residential development projects in the sub-centers.

iii) Infrastructure Development (at Minimum by Public Sector)

According to the urbanization potential analysis in Chapter 4, it is pointed that availability of infrastructure, in particular accessibility to the road has great influence on the land potential. For example, the area with good accessibility to road has more development potential than the area without it. So, the Government carried out seed infrastructure projects in prior to the private investment to improve land potential of the sub-centers. It may have certain influence to guide land development along the plan.

3) Implementation of Sub-Center Sub-programs

Based on “2) Planning for Implementation Scheme under PPP” mentioned above, the sub-programs and projects shall be done by public sector as follows;

Table 5.4.15: Sub-programs and projects of the Priority Programs 4

Sub-program	Project	Implementation Organization
Investment Promotion Sub-program (S1)	Sub-center SEZ Development Project (S1-1)	DPWT, Vientiane Capital
	PPP Acceleration Project (S1-2)	DPWT, Vientiane Capital
Sub-centers' Core Area Development Sub-program (S2)	KM21 VIP Development Project (S2-1)	MOIC
	Thanaleang VLP Development Project (S2-2)	MPWT
	Relocation of Higher Education Institutes Project to Dongdock (S2-3)	DPWT
	Commercial Complex Development Project at Naxaithong (S2-4)	DPWT
	Vientiane Central Station Development Project (S2-5)	Lao National Railway Authority
Infrastructure Development Sub-program (S3)	Secondary Roads Improvement Project (S3-1)	DPWT
	Infrastructure and Sanitation Development Project (S3-2)	DPWT
	ICT Infrastructure Strengthening Project (S3-3)	DPWT
	New Public Park Construction Project (S3-4)	DPWT, VUDAA, OPWT

Source: JST

(3) Implementation Schedule

Table 5.4.16: Implementation Schedule of the Priority Programs 4

Component	Contents	Short (-2015)	Mid (-2020)	Long (-2030)
Establishment of Implementation & Coordination Body	Planning Stage			
	Implementation Stage			
Planning for Implementation Scheme under PPP and Implementation of Sub-Center Sub-programs	Investment Promotion			
	Sub-center SEZ Development Project (S1-1)			
	PPP Acceleration Project (S1-1)			
	Core Area Development			
	KM21 VIP Development Project (S2-1)			
	Thanaleang VLP Development Project (S2-2)			
	Relocation of Higher Education Institutes Project to Dongdock (S2-3)			
	Commercial Complex Development Project at Naxaithong (S2-4)			
	Vientiane Central Station Development Project (S2-5)			
	Infrastructure Development			
	Secondary Roads Improvement Project (S3-1)			
	Infrastructure and Sanitation Development Project (S3-2)			
	ICT Infrastructure Strengthening Project (S3-3)			
	New Public Park Construction Project (S3-4)			

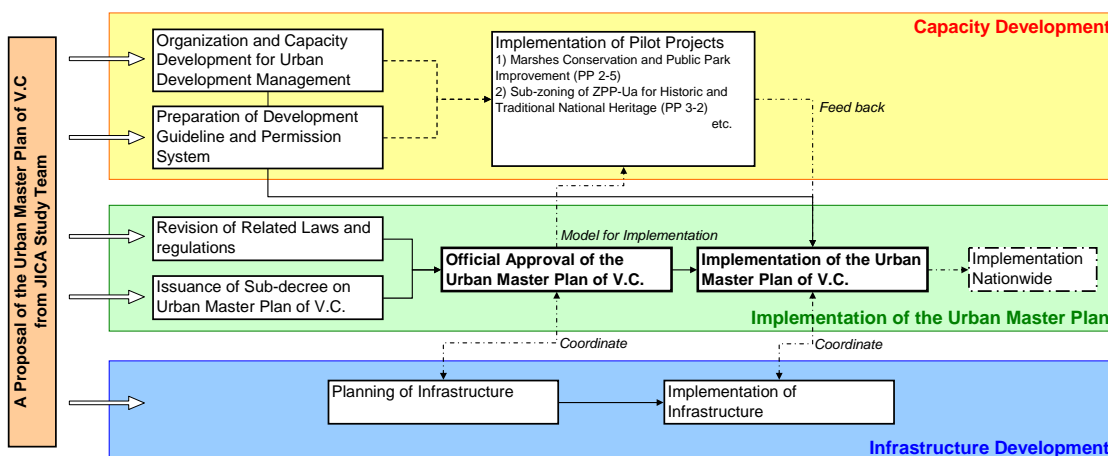
Source: JST

5.4.3 Immediate Steps for Implementation of Urban Development Master Plan

The Urban Development Master Plan has been formulated by the joint work by JICA Study Team and the Laotian counterpart team under this Project. As the Urban Master Plan as such essentially regulates and controls the individual property rights for the public cause to make a good and livable city, the urban master plan has to be readily approved by the relevant government authority under law-full procedure and be given the legal power to control and regulate construction activities within the expanse of the urban planning area.

Making a draft urban development master plan is only the beginning of the long-lasting implementation phase of the urban master plan. The urban master plan has no value unless it is put to actual use for the regulation, control, construction and rehabilitation of the city with its dynamic and integrated spheres and facets.

For Vientiane Capital, there are roughly three parts in the implementation of urban development master plan.



Source: JST

Figure 5.4.4: Implementation of Urban Master Plan

(1) Implementation of Urban Development Master Plan

The implementation of the urban master plan encompasses 1) regulation of individual buildings; 2) control of large scale development applications; 3) urban area improvement; 4) new urban area development and urban redevelopment and 5) urban environment improvement. These activities shall be carried out by Vientiane capital following the proposed master urban development master plan.

The development of Sub-Centers will be an important first step for the realization of the future visions of the Master Plan. Amongst many of the proposed Sub-Centers, Vientiane Logistics Park (VLP) within Tanaleang Sub-Center zone and Vientiane Industrial Park (VIP) within KM21 Sub-Center zone should be implemented in an early stage to serve as a model for other Sub-Center plans.

(2) Capacity Development

The implementation assistance denotes the activities for providing guidance and preparing new systems necessary for the implementation of the master plan. Also, the capacity development to strengthen the organizational capacity for effective implementation of the urban master plan will be essential. In order for the capacity development, introduction of pilot projects shall be essential as part of the on-the-job training. The focus of the pilot projects are proposed as the detail zoning scheme for the historic conservation area and the planning of marshes conservation and park development plan. The outcome of the pilot projects need to be returned as “feed-back” to the implementing body of the master plan.

(3) Infrastructure Development

Urban development is always coupled with the related infrastructure development, such as road network, water supply, drainage, sewerage, solid waste etc. It often happens that the implementer of specific infrastructure may be different from the implementer of the master plan (which is ordinarily the city government), coordination needs to be established between different implementing bodies.



CHAPTER 6

Conclusions and Recommendations

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

The following are the conclusions and recommendations for the sustainable development of Vientiane Capital of Lao PDR.

1. Vientiane is the capital city of Lao PDR, and is endowed with high potential for economic development in the future as well as a gateway to the Greater Mekong Sub-Region (GMS).
2. In the last 10 years, Vientiane Capital has seen rapid urbanization in and around the city, and consequently the city's rich farm land has been sacrificed to make room for urbanization, and the areas on the fringe of the existing urban area has been urbanized quickly where the issue of urban sprawl is apprehended.
3. Under such circumstances, the JICA Study Team together with PTI and Vientiane Capital examined the present conditions, analyzed the future prospects and formulated the urban development master plan for Vientiane Capital through the close collaboration amongst concerned organizations and in consultation with the broad stakeholders.
4. Consequently the future vision for Vientiane Capital were formulated with three pillars; namely 1) a regional hub in Greater Mekong Sub-Region, 2) center for Nation, and 3) comfortably-livable and beloved hometown for all.
5. According to the socio-economic projection, the population of Vientiane Capital will become 1.4 million in 2030, and during the same period, GRDP of Vientiane Capital will grow at an annual average growth rate of 8%.
6. In order to accommodate the increasing population and growing urban economy, spatial structures of Vientiane Capital was scrutinized with two scenarios; single-core structure and multi-core structure, and the multi-core structure was adopted as desirable, in which the growth of the central city was regulated and sub-centers in the suburbs will be developed as new urban centers to absorb growing population and economy.
7. The land use zoning plan for 2030 was proposed in consultation with PTI and Vientiane Capital as a results of rounds of revisions and modifications based on the visions, socio economic framework and the adopted spatial structure for Vientiane Capital. This land use zoning plan has to be considered by Laotian side for approval and should be announced for implementation without delay with proper legal power for enforcement.
8. With regard to the infrastructure development in line with the urban master plan, the following is recommendable;
 - For road and transport, two important ring roads, namely the inner and outer ring roads, must be completed by 2030, together with one more ring road and two important radial roads;

- For water supply the service ratio is set at 97% of total population in 2015 and 100% in 2020, and the capacity development for sustainable implementation is essential;
 - For sewerage, wastewater treatment system should be provided in the long term to prevent deterioration of water environment and preparation for this has to started by Vientiane Capital;
 - For drainage, retarding ponds such as marshes and river channels should be protected as much as possible and appropriate gates and pumps shall be provided as necessary for efficient discharge of rain water;
 - For solid waste the generation is projected to increase rapidly and waste collection rate will be increased to 100% by 2030 and community awareness program for solid waste collection and promotion of 3R (Reduce, Reuse and Recycle) is necessary;
 - For parks and greenery new parks will be created mainly in newly urbanized area to reach 10 times of the current level by 2030 and pilot scheme with high demonstration effect such as Nong Chang Marsh Ecological Park scheme is necessary for immediate implementation in consideration of retaining and enhancing its environmental effects;
9. For effective implementation of Urban Development Management (UDM) program, four important principles are proposed to be respected, namely 1) Good Governance, 2) Stakeholder Involvement, 3) Public Private Partnership and 4) Sustainability.
10. In all five planning zones are proposed with specific characters in Vientiane Capital; namely 1) Historic Conservation Zone inside of ancient ramparts, 2) Inner Urban Zone inside the inner ring roads, 3) Outer Urban Zone between the inner and outer ring roads, 4) Sub-Center Zones, and 5) Urban Cluster Zone.
11. In order to achieve the overall goals and visions of the urban development master plan, 3 to 5 sub-programs are proposed for each of the five planning zones reflecting the issues and prospects of each planning zone, which constitute the body of the UDM to be implemented based on the proposed Master Plan of Vientiane Capital.
12. For the implementation of UDM for Vientiane Capital, there are basically four organizations, namely PTI, DHUP, DPWT and VUDAA, sharing the mandate for various phases of implementation, including 1) policy making, 2) planning & research, 3) implementation and 4) monitoring.
13. As the duties and roles of each of the four organizations related to UDM are fairly well demarcated, the current issue of lack or insufficiency in coordination amongst the concerned organizations has to be rectified in collaborative efforts of the concerned organizations.
14. With regard to the legal framework, the following tasks should be given immediate focus for improvement;
- Law on Urban Plan shall need to be amended in part in line with the results of this study, such as the implementation organization at respective levels of urban planning
 - Law on Urban Plan shall need to newly add stipulation on the development permission system to secure the zoning of the city planning area, to encourage the formation of favorable and safe urban areas, and to prevent unregulated urbanization.
 - The role of VUDAA shall need to be readjusted by revising the relevant Decree to focus mainly on the solid waste and night soil collection and urban beatification and

- cleaning, while other urban service functions of VUDAA shall be integrated with those of DPWT.
- The Development Guideline shall need to be prepared to clarify the responsibility of developers of large scale development in maintaining good living environment and provision of public facilities.
 - The outstanding Building Standard shall need to be consolidated with relevant articles and necessary revision of parameters such as maximum height, coverage ration and plat rations shall be done to cope with the proposed urban development master plan.
15. There are essentially four main issues identified with regard to the human resources development, namely; 1) shortage of officials, 2) insufficient technical personnel to follow the construction, 3) lack of technical manual and/or guideline on urban planning management, and 4) imbalance of professional field.
 16. Capacity Development Plan (CDP) is thus proposed for effective and sustainable implementation and management of UPD, and the targets of CDP are 1) PTI, 2) DHUP, 3) DPWT – OPWT, and 4) VUDAA.
 17. The proposed plan and activity of CDP is composed of 6 steps; 1) initial working committee among organizations, 2) working committee for legal framework, 3) recruiting and training plan of new graduates and mid-carriers in related organizations, 4) training system for OPWT and VUDAA technical officials, 5) new division of new criteria, and 6) working group of human resource development and management in private sector.
 18. For the commencement of the implementation of the MP and UDM, four Priority Projects (PP) were proposed , namely; PP1: Urban Development Management, PP-2: Urban Infrastructure Development, PP3: Historic Area Conservation and Revitalization, and PP4: Sub-Center Development for immediate action over the next 5 years or more.
 19. Master Plan is not a fixed plan over a long period of time, and need to be modified regularly in consideration of various internal and external conditions of the city, and this regular modification and updating shall be the main task of the Laotian side.
 20. New projects such as Trans Laos Railway Project or Nong Ping Urban Development Project need to respect the development vision of Vientiane Capital, and be harmonized as much as possible with the specific stipulation of the Master Plan. The Master Plan on the other hand will need to be adjusted as necessary in the future to adapt to evolving situations and needs.
 21. The Laotian side, particularly Vientiane Capital and PTI must lead the sustainable and unyielding implementation of the MP and UDP in collaboration with related organizations and agencies, and the capacity development is considered to be an important aspect for facilitation.