Spatial planning and construction materials exploitation issues in Vietnam - Challenges in integrating towards environmental protection

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1. Legal framework for planning and urban development in Vietnam
2. The legal framework for environmental protection in the planning in Vietnam
3. Strategic environmental assessment in regional construction planning in Hoa Binh Province
LEGAL FRAMEWORK FOR PLANNING AND MANAGEMENT ON URBAN DEVELOPMENT IN VIETNAM
Viet Nam has: **774 urban areas:**

+ Urban system is divided to 06 types
+ 02 special grades, 15 grades I, 14 grades II, etc.

**Urbanization rate:** **34%**

+ Average growth: 1% per year.

**Total urban land area:** 34,017km² (10.26% of the total natural land area in the whole country)

**Total urbanized land area:** 14,760km² (4.42% of the total natural land area in the whole country)
The National urban network planning orientation until 2025 and vision to 2050

By 2025:

+ Total number of the urban areas: 1,000 incl. 17 special grades and grade I, 20 grades II and 81 grades III

+ Population in urban areas: 52 million taking up 50% of the whole country
The system of legal documents on construction planning (before 2014)

- Construction law in 2003
  - Decree 29/2007 on Urban architecture management
  - Decree 08/2005 on Construction planning
  - Decree 42/2009 on Urban classification

- Urban planning law in 2009
  - Decree 37/2010 on Formulation, appraisal, approval and management of urban planning
  - Decree 38/2010 on Management of urban space, architecture and landscapes
  - Decree 39/2010 on Management of urban underground construction space

- The circular providing guidance for formulating, appraising, approving and managing construction planning
- The circular providing guidance for formulating, appraising, approving and managing the construction planning of industrial parks and economic zones.
- The decision on the records of planning projects
- The decision on the signs in drawings
- The circular on rural construction planning

*Construction planning in Vietnam is understood as spatial planning or physical planning*
Current legal documents system of urban planning & urban development (after 2014)

**CONSTRUCTION LAW**
(Amended in 2014)

- Decree no. 44/2015/NĐ-CP on detailed regulations on construction planning

**LAW ON URBAN PLANNING**
(enacted in 2009)

- Decree no. 37/2010/NĐ-CP on the formulation, appraisal, approval, and management of urban planning.
- Decree no. 38/2010/NĐ-CP on management of urban space, architecture and landscapes.
- Decree no. 39/2010/NĐ-CP on management of urban underground construction space.
- Decree no. 11/2013/NĐ-CP on the investment management of urban development

- Circular 10/2010/TĐ-BXD: Defining records of each urban planning
- Circular 06/2013/TĐ-BXD and Circular 16/2013/TĐ-BXD: Guidelines on urban design in urban planning.
- Circular 12/2014/TĐ-BXD on the investment management of urban development
Construction Law was enacted in 2003:

+ **Scope of regulation**: Construction activities, investment in the construction of works

+ **Contents**: Including 9 chapters: General provisions; Construction Planning; Work construction investment projects; Construction survey and designing; Construction of works; Selection of construction contractors and contracts; The State management over construction; Commendation and handling of violation; Implementation provisions.

Urban Planning Law was enacted in 2009:

+ **Scope of regulation**: This law prescribes urban planning activities including elaborating, evaluating, approving and adjusting urban planning; organizing the implementation of urban planning and managing urban development according to approved urban planning.

+ **Contents**: Including 06 chapters: General provisions; Urban planning; Appraisal and approval of urban planning; Adjustment of urban planning; Implementation arrangement and management of urban development according to the approved plans; Implementation provisions.
Construction planning system in 2003
(According to Construction Law in 2003)

CONSTRUCTION PLANNING

- Regional Construction Planning
  (Provincial region, inter-provincial region, district region and inter-district region)
- Urban Construction Planning
- Rural Residential Areas Planning

Urban construction general planning

Urban construction detailed plan (1/500-1/2000)
Construction planning system in 2009

CONSTRUCTION PLANNING

Regional Planning
(Provincial region, inter-provincial region, district region and inter-district region)

Urban Planning
General Planning
(TL 1/10,000-1/50,000)

Zoning Plan
(TL 1/2000-1/5000)

Detailed Plan
(TL 1/500)

Rural Residential Area Planning
Current construction planning system
(According to Construction law in 2014 and Urban planning law in 2009)

CONSTRUCTION PLANNING

Regional planning
(Provincial region, inter-provincial region, along highways, etc…)

Particular-function zones planning
(Economic zones, hi-tech parks, preserved and ecological sites, etc…)

Particular-function zones Master plan

Particular-function zones-Zoning plan

Particular-function zones-Detailed plan

Urban Planning

Master Plan

Zoning Plan

Detailed Plan

Rural Planning

Commune General Plan

Rural Residential quarters Detailed Plan
Urban Planning System
(According to Law on urban planning in 2009)

URBAN PLANNING

Master Plan
(Scale: 1/10000-1/50000)

Zoning Plan
(Scale: 1/2000-1/5000)

Detailed Plan
(Scale: 1/500)
Ha Noi Master Plan until 2030, vision to 2050

By 2030:
Population: 9.0-9.2 million
Urbanization rate: 68%

By 2050:
Population: 10.73 million
Urbanization rate: 70-80%
Hanoi urban planning (Example)

The zoning plan N4 - The central urban area of Ha Noi city
Hanoi urban planning (Example)

Me Tri ecologic urban area detailed plan – Ha Noi city
**Scope of adjustment:** Adjusting every activities relating to urban development investment: Urban planning, investment, operation, exploitation, transfer of urban development projects.

**The urban development areas include:**
- New urban areas
- Urban expansion
- Urban renovation
- Urban preservation
- Redevelopment
- Areas with special functions

**Within the competence of urban development areas**

- The urban development areas in the urban center whose master plan were formulated will be approved by Prime Minister (Cities under central management, provincial city grade I, etc...)
- The urban development areas belong to the administrative boundary of two provinces and above.
- The urban development areas are the new urban areas with their population size equivalent to the urban grade IV and above.
- The urban development areas play important roles in security and national defense
- The remaining urban development areas
LEGAL FRAMEWORK FOR ENVIRONMENTAL PROTECTION IN PLANNING
The legal framework for Environmental Protection planning

**ENVIRONMENTAL PROTECTION LAW (2014)**

- Decree 18/2015 / ND-CP: Regulations on environmental protection planning, strategic environmental assessment, environmental impact assessment and environmental protection plan.
- Circular 27/2015 / TT - BTNMT: Regulations on strategic environmental assessment, environmental impact assessment and environmental protection plan (The provisions in Chapter II of the Circular).

**CONSTRUCTION LAW (Amended in 2014)**

- Decree 44/2015 / ND-CP: Regulations detailing some of the content on Construction planning.

**URBAN PLANNING LAW (2009)**

- Decree 37/2010 / ND-CP: Regulations on formulation, appraisal, approval and management of urban planning.
- Circular 10/2010 / TT-BXD: Regulations Profile of each type of urban planning projects
- Circular 06/2013 / TT-BXD and Circular 16/2013 / TT-BXD: Content guidelines on urban design in urban planning projects.

**ENVIRONMENTAL PROTECTION LAW (2005)**

- Decree 80/2006 / ND-CP
- Circular 08/2006 / TT-BTNMT

**Circular 01/2011 / TT-BXD**

SEA in Construction planning, Urban Planning

*SEA: Strategic Environmental Assessment*
The concept of "environmental planning"

- It is Environmental partitioning to preserve, develop and establish infrastructure associated with the system of Environmental Protection solution system, that is closely related with socio-economic development master plan to ensure sustainable development (Section 21, Article 3);

-Principles of environmental protection planning (Section 1, Article 8)

- In accordance with natural conditions, socio-economic, defense and security development master plan;

- Ensure consistency with land use planning; Consistency between the basic content of Environmental Protection Planning;

- Ensure environmental protection principles.

Planning duration:

Environmental protection planning period is 10 years, vision to 20 years (Section 2,3, Article 8).
The content of Environmental Protection Planning (According to the Decree 18 / ND - CP dated 02/14/2015 - chapter 2)

1. Movements, environmental management objectives, forest, biodiversity conservation

2. Current status of the marine environment, islands, river basin and the solutions target the conservation and protection of natural resources and the marine environment, islands, river basins;

3. Situation of arising gas and air environment quality, objectives and planning solutions for the development activities with large emission sources;

4. Degradation status, soil pollution, objectives and measures for preventing degradation, soil pollution, environmental restoration of contaminated land degradation;

5. Water environment status, wastewater management objectives and solutions, and water environmental protection;

6. Collection status, handling and goals, solution of solid waste management activities, industrial and hazardous solid waste;

7. Status of monitoring networks and environmental monitoring, goals, orientated planning of monitoring system and environmental monitoring;

8. Environmental Partitioning under development objectives, protection, conservation and adaptation to climate change;

9. Prioritized environmental protection programs and projects, and environmental indicators;

10. Maps, diagrams related to regional planning;

11. Planning implementation resource of Environmental Protection, responsible for implementing and monitoring the implementation of environmental protection planning.
**Relation of SEA and EIA**

- **Strategic Environmental Assessment (SEA)**
  - Assess the impact of a strategic resonance, planning or plan
  - Harmony between economic development, environment and society, ensure sustainable development

- **Environmental Impact Assessment (EIA)**
  - Environment impact assessment of a specific investment project
  - Ensure that the process of implementing of the project meets environmental standards

*SEA: Strategic Environmental Assessment*
*EIA: Environmental Impact Assessment*
Legal framework of SEA / EIA

- The concept of "SEA"

+ SEA is "to analyze and forecast the environment impact of the project strategy, planning, development plans to offer solutions to minimize adverse impacts on the environment, as the basis and is integrate in strategy, planning, development plans to ensure sustainable development goals" (Section 22, Article 3, Environmental protection Law 2014)

+ SEA is not only a technical tool but also as a method of management that plays an important role in environment protection of Construction planning and Urban planning (In view of the MOC)

+ SEA is a content of construction plan, to be carried out simultaneously in the process of the construction plan (Section 1, Article 3, TT01 / 2011 / TT - BXD)

- The concept of “EIA”

+ Environmental Impact Assessment is to analyze and forecast the environment impact of specific projects to make the environment protection measures when implementing such projects (Section 23, Article 3, Environmental protection Law 2014)
The content of the SEA
(According to Circular 01/2011 / TT-BXD)

Environmental protection is integrated in Construction planning / Urban Planning through Strategic Environmental Assessment

1. Identify the key issues and environmental objectives related to the construction/ urban planning
2. Analysis of trends in the future without construction planning
3. Assess orientations and goals
4. Assess trends and important issues about the environment in construction/ urban planning
5. Identify priority issues in mitigation measures and the environmental monitoring mechanism
The contents of all Construction planning projects must meet the approved planning tasks and specific requirements, including SEA. This is clearly stipulated in Decree 44/2015 / ND-CP stipulating in detail a number of contents on Construction planning, including:

- Section 1, Article 8: For the Construction planning
- Section 2, Article 12- 14: For General Planning, Regional Planning, Detailed planning projects build specific functional areas
- Section 3, Article 18-19: For Construction general planning project and Construction detailed planning project on rural residential area

**Content of SEA in Construction planning projects are concretized include the following:**

- Identify the main environmental issues within and outside the planning area
- The current status of pollution sources have directly affected the environment in planning area
- The forecast for environmental changes in the process of planning and implementation.
- Propose preventive measures and priorities for implementation; propose isolated areas, environmental protection
Legal framework integrate environmental protection in construction planning and urban planning

In urban planning, projects also consist SEA in planning content. This is clearly stipulated in the articles include: Decree 37/2010 / ND-CP on the formulation, appraisal, approval and management of urban planning, including:

- Article 15: For General Planning of centrally run cities and towns, grade V not recognized as towns
- Article 16: For General Planning provincial cities, towns and General Planning new urban areas
- Article 19: For Regional Planning projects
- Article 20: For Detailed planning projects
- Article 22 - 30: For planning projects of technical infrastructure

**SEA in Urban Planning projects are concretized consists the following contents:**

- Assess current status of the environment: urban natural environment, environmental quality, socio-economic issues
- Analysis and forecast positive and negative impacts on socio-economic development and urban environment; proposed system of environmental protection criteria to offer solutions for orientations spatial development and infrastructure optimization.
- Set out the overall solution to prevent, mitigate and overcome the impacts and risks to the population; natural ecosystems; water, air, noise when implementing urban planning.
- Programming, environmental monitoring plan in engineering, management and environmental monitoring.
LEVEL OF CONCERN IN ENVIRONMENTAL PROTECTION IN HOA BINH REGIONAL PLANNING
Hoa Binh Province has an area of 459,635.15 hectares of natural and 793,471 inhabitants; 11 administrative units attached, including 10 districts; Lac Thuy, Kim Boi, Luong Son, Ky Son, Da Bac, Mai Chau and Cao Phong, Tan Lac, Lac Son, Yen Thuy and Hoa Binh city, is bounded as follows:

- North borders with Phu Tho Province;
- South borders with Ha Nam and Ninh Binh Provinces;
- East borders with Hanoi Capital;
- West borders with Son La and Thanh Hoa Provinces.
Content of Hoa Binh Regional Planning

- Assess the current status of the natural, economic - social conditions; identify regional development motivation.
- Identify urban systems, residential areas; industrial, agricultural, forestry, fisheries and tourist areas; the heritage protection areas, natural landscape, cultural and historical sites; the restricted construction and reserved for developing areas.
- Identify network, location, scales of regional or inter-regional infrastructural headworks (Transportation, construction platform, rain drainage, power supply, water supply, communications, wastewater drainage, solid waste, cemeteries).
- Expect the developed-priority sections and resources for implementation.
- Forecast regional environmental impacts and propose measures to mitigate adverse environmental impacts of regional construction planning project.
**Spatial development orientation**

Regional development model is integrated economic development region includes high-tech industry, cultural-eco tourism, trade and service, education and training, and Agriculture-Forestry-Fishery around nuclear towns at provincial, regional and typical urban levels.

Economic development associated with main potential areas such as urban centers, Hoa Binh City, Luong Son and Ky Son Town, Mai Chau tourist area, Hoa Binh reservoir bed tourist area, Cuc Phuong National Forest, the natural reserve zone.

Economic development corridor is formed by the predominant economic development Ky Son - Luong Son - Lac Thuy: Range corridor adjacent to Hanoi along with Ho Chi Minh route with the land is flat, wide, densely populated; good traffic and infrastructure to facilitate regional development.
Develop economic growth centers - Industrial zones

Mineral zone

Orientation

Current status
Orientated development for industrial and mining zones

+ To 2015 phase: Planning completion, site clearance, infrastructure investment and invested attraction in 7 industrial zones: Luong Son industrial zone - 230 hectares, Yen Quang industrial zone - 200 hectares, Nam Luong Son industrial zone - 200 hectares, Nhuan Trach industrial zone - 200 hectares (Luong Son district), left Song Da industrial zone - 86 ha (Hoa Binh City), Mong Hoa industrial zone - 200 hectares (Ky Son), Lac Thinh industrial zone - 200 hectares (Yen Thuy district), built industrial clusters along the Ho Chi Minh route.

+ 2016-2020 phase: Plan and build new infrastructure of industrial zones: Thanh Ha industrial zone - 300 hectares (Lac Thuy district). In case of continuing to research, build Dong Tam industrial zone (Lac Thuy district), Dam Duong industrial zone (Lac Son district).

Focus on building industrial clusters in districts along the route Ho Chi Minh. Attract investment projects to fill 70-80% of the land for industrial zones.

In which, the industrial zone of Nam Luong Son, Thanh Ha, Lac Thinh attract different types of consumer goods industry using many labors; industries of textile, footwear, agricultural and forest product processing for export, mining and building materials manufacturing industry are suitable for mineral potential of each region.
Environmental protection issues in Hoa Binh Regional Planning

SEA report content in Hoa Binh provincial region planning

1. Assess environmental current status in the study area

2. Forecast trend of environmental problems due to the impact of urban distribution, population, economic activities, infrastructure networks in the region; mention environmental issues that is resolved and unresolved in the planning project

3. Recommend environmental protection solutions according to developed region.
Assess environmental current status

Water Environment
+ The quality of the province's groundwater is still good
+ Surface water pollution tends to increase due to wastewater from industrial activities, agriculture and daily life.
+ Sewage treatment systems in many industrial zones, urban area, mining have not been adequate attention, untreated wastewater before discharge into the environment or are preliminary.

Water pollution in Da and Ma River

Air environment
+ The sources of air pollution is mainly caused by traffic activity caused
+ Most of the industrial production facilities do not ensure the regulations on discharge, typically in the production facilities of stone, paper, cement, etc.

Soil environment
+ Soil degradation and pollution due to excessive use of chemical fertilizers, drugs stimulate the growth and cultivation to expand land bank
+ Occurred flooding and landslides in the reservoir bed when the Hoa Binh hydropower plant go into water accumulation

Ecological environment
+ Biological Diversity is relatively high, fairly typical
+ Biodiversity, especially forest ecosystems severely degraded in recent years
Forecast trends, environmental changes in planning area

Depletion of water resources
- Increased risk of water shortage due to rising domestic demand and the impact of climate change
- Water quality in rivers tend to deteriorate due to increased waste and weaken self-cleaning ability

Degradation of land resources
- Due to the socio-economic development activities, particularly agriculture
- Accumulation of pollution and land degradation in the area specializing in agriculture
- Pollution, land degradation in the region landfill, cemetery

Increased waste
- Increase the amount of wastewater and household solid waste due to population growth;
- Increase the amount of industrial solid waste, particularly hazardous waste;
- Increase dredging sludge and sewage treatment at one point;
- Pressure from household solid waste, livestock, fertilizer residues, plant protection drugs

Change in biodiversity
- Raise forest cover to 50% by the development of protection forests and special-use forests and production forests;
- The risk of forest fires, destruction of biodiversity due to increased drought in the dry season.
Environmental protection solution proposed in the plan

Center City area include Hoa Binh - Ky Son - Luong Son - Bac Lac Thuy: need rational use of land resources in urban development, minimizing conflicts social environment in the urban development process.
Environmental protection solution proposed in the plan

West & NorthWest areas including Mai Chau, Da Bac, Tan Lac, Cao Phong districts:

Strengthening on development & investment together with forest preservation, ensuring sustainable ecology for whole province.
Environmental protection solution proposed in the plan

Eastern and southern province including Kim Boi, Lac Thuy, Yen Thuy, Lac Son districts. When industrial development in this area, it should take full calculation solutions for each area drainage and build its own drainage system for wastewater and rainwater.
Environmental protection solution proposed in the plan

- For the natural landscape protection zone (nature reserve zone such as Hang Kia - Pa Co, Thuong Tien - Kim Boi, Phu Canh - Da Bac, Ngoc Son - Ngo Luong, etc.), only allows developing low density eco-tourism, construction not affect the biodiversity of the forest flora.
Limitations of SEA report in Hoa Binh Provincial region planning:

- The report has not forecasted yet environmental impact assessment in mining operations and construction materials production that is taking place is quite strong in Hoa Binh (air and soil pollution, biodiversity decrease, environmental disasters, etc.)

- There are not suggestion of environmental protection solution for mining zone and construction material manufacturing.
Environmental protection issues in mining in Hoa Binh province

- 100 companies engaged in licensed mineral activities. In which, it is mainly mining for building materials and cement, with 94 mines.

- 100% of licensed units in mining activities that compile dossiers on the environment is confirmed by competent authorities.

- Organizations and individuals can plan for environmental renovation and restoration are approved and escrow in the amount equal to the total funding for implementation of renovation and restoration.

However:

- Environmental renovation and restoration for businesses engaged in mineral activities are not strict management

- Through inspection, the result showed that many units have not yet fully implemented environmental protection commitments. The discharge of untreated wastewater still happen stealthily.

- Improper exploitation with license granted and illegal mining have been happening much longer despite of provincial authorities ware involved.

- Technological lines, mining equipment, processing, production do not guarantee, not according to the original design. Establishments do not applying measures to mitigate pollution.

*It leads to pollute the water, air, loss of security and order, causing urgency among the people*

Further studies

Challenges in integrating environmental protection towards: Spatial planning and building materials exploitation issues

- The connection between the Environmental Protection Planning with Construction planning/ Urban Planning
- Content adjustment in Environmental Assessment Strategies in Construction planning under the Environmental Protection Law 2014
- Comprehensive renovation of urban planning in Vietnam towards integrated planning
- Mining problems of building materials should be more concerned (the relationship of supply and demand, economic-social development motivation, land use planning, spatial orientation, infrastructure and environmental impact changes, etc.) in construction planning solutions and not just in respect of environmental protection.
THANK YOU!