ON THE PLAN FOR LAND USE

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I. REQUIREMENT FOR LAND USE

Land is one of precious natural resources, it cannot be restored and its value will increase incessantly according to the utilization process, growth rate and development level of the national economy. Our country is now in the initial stage of development acceleration, with many changes in the mechanism of domestic and foreign relations which make a favourable environment for economic development.

According to the plan, Vietnam's per capita GDP will double by the year 2000 as compared with 1990, with annual growth rate of 9-10%, agro-forestry-fishery production up by 4.5-5%, industry 14-15%, export 24-25%, service 12-13%. Meanwhile population increases by 1.8% per year, unemployment will be remarkably reduced, more jobs will be created for yearly increasing workers.

This situation will certainly lead to the requirement for land use of booming economic sectors. Meanwhile population growth leads to increase in demand for houses and urban improvement to secure facilities for the people living, this is a very complicated and difficult task.

Thus, an urgent problem of national strategy is how to manage land resource with the aim to use it fully, reasonably, scientifically with the best result. This target is only initiated and implemented through the land-use plan.

II. IDENTIFYING THE COEFFICIENT OF LAND USE PLAN

1. Dependent factors:

The land use level of a certain area depends upon:

- Population density.
- Economic growth rate taking place on the land area used by residents and per capital GDP growth rate.
- GDP growth rate divided by total used area.

2. Figuring out the coefficient of land use plan:

We can use the following symbols:

J: Region

t: Year, commonly t = 0, 1,...14

D^t_J: Comparison coefficient of population density of region J in the year t

A^t_J: Comparison coefficient of GDP growth rate of region J in the year t

B^t_J: Comparison coefficient of per capita GDP of region J in the year t.

$$R^t_J = \frac{A^t_J + B^t_J}{2} \quad (1)$$

General indicator of GDP growth rate and per capita GDP growth rate of region J in the year t

P^t_J: Comparison coefficient of GDP made on an unit of area of region J in the year t

If H^t_J is the development coefficient of land use of Region J in the year t, then:

$$H^t_J = \frac{\alpha\ D^t_J + \beta\ R^t_J + \gamma\ P^t_J}{\alpha + \beta + \gamma} \quad (2)$$

3. Content analysis

According to formula (2), the development efficient of land use of Region J depends upon population growth rate (both naturally and mechanically), GDP growth rate and per capita GDP growth rate and growth rate of values made and calculated according to GDP of Region J via coefficients α , β and γ .

Attention: GDP is gross domestic products calculated according to the system of national accounts (SNA). According to this calculation, GDP include revenues from land value increased by investment.

4. Practical meaning:

- This calculation gets out of the practical calculation of the land use rotation coefficient, commonly applied in the evaluation of agricultural land use intensity.
- If H^t_{VN} is expressed as the development coefficient of VN's land use in the year t, then we can see:

$$K^t_J = \frac{H^t_J}{H^t_{VN}} \quad (3)$$

is the development coefficient of land use of Region J as compared with of the whole country average in the year t.

- If $\overline{K}_J$ is expressed as the average growth coefficient of land use of Region J during the planning process (possibly 5, 10, 15 years or longer), then:

$$\overline{K}_J = \frac{\sum_{t=0}^{T} K^t_J}{T} \quad (4)$$

(T = 5, 10, 15, 20...): Planning duration

5. Application possibility:

- Depending on the forecast of Region J's socio-economic development for the planning duration T.

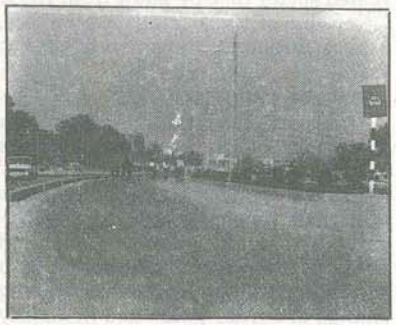
Generally, land use planning duration is similar to the forecast duration or that of the socio-economic development master plan, so the calculation has favorable conditions.

- Development strategic forecasts at levels of the country, major regions, provincial focal regions are paid full attention on the macro-economic side. Therefore secondary Region J (if there are not enough data) can apply internal deductive method.
- The set of coefficients α , β and γ has close relations. In case of simplication, the method of average arithmetic ($\alpha = \beta = \gamma = 1$) can be used.

III. CLARIFYING LAND USE PLANS FOR EACH SECTOR

The land use plan must be made at all levels and for every kind of land. This task must be implemented in order just since 1996. Lack in land use plan of every locality will cause lack in bases to calculate and consider the targets of the country's land use plan. However, we cannot wait until there are enough land use plans of all levels, branches, and then we make the country's master plan. There should be the country's master plan of land use right now so that localities can depend it upon to make their own plans. At first, the land use plans of the following sectors, industries should be formed:

- Detailed land use plans for industrial zones, export processing zone across the country. The chief planner



should be the Ministry of Planning and Investment.

- Land use plans for irrigation development, hydropower should clarify how to move people in case of land used for building lake, dyke, electricity generating station, transmission lines and people in flood areas.

- Land use plans for communication network should clarify what part is controlled by the central government to keep the locality informed.

- The implementation of land use plans for urban and rural residential areas should be tightly controlled.

- Plans for using agricultural, forestry land must be minutely calculated towards each area, locality and kind of land with concrete guidelines.

Based on these important plans, the country's land use master plan is made with the long view. Thereby localities can have the direction to use their own land.

IV. ORIENTATING THE COUNTRY'S LAND USE PLAN UNTIL 2010

Based on dependent factors and coefficient of land use plan, the structure of our country's land use from now to 2010 is initially altered as follows:

1. Agricultural land:

- Agricultural land is estimated at 7,810,000-8,072,000 ha until 2000, of which 5,630,000-5,809,000 ha is used for annual plantation with a land use coefficient of 1.9-2.0. This will result in 11-12 million ha of planting land, 30-32 million tonnes of paddy rice and exports valued at US$2,200 million by 2000. Therefore over 320,000 ha of waste land must be reclaimed and put into production from now to 2000.

Besides 149,700 ha of farming land will be turned into specialized land, rural residential area, urban area, with an average of 25,000 ha per year. Consequently, if we want to have 8,072,000 ha of farming land, we must reclaim 140,000 ha of waste land.

- Farming land will reach 8,821,500 ha by the year 2010, of which 4,351,300 ha is used for planting rice, ensuring 38-40 million tonnes of rice annually (400 kg of rice per capita). From now to 2010, 1,700,000 ha of waste land should be reclaimed to rebalance the area of farming land since 320,000 ha is used for other purposes.

2. Forestry land:

The main task of the forestry sector is to change from exploiting forest resource to protecting, recovering and developing forest. Thus, forest area will represent 33% of the country's natural area by 2000 and 49% by 2010.

3. Land for special use:

In the country's process of industrialization and modernization, specialized land will increase significantly, especially land for construction, communication, irrigation and in three focal economic areas.

Specialized land will increase by 197,300 ha of which 80,100 ha is used for farming from now to 2000, 461,000 ha including 180,000 ha for farming by 2010. The additional land for special use comprises 21,000 ha for construction, industrial zones accounting for 4.55% of additional land or 20% of land for construction only.

4. Urban land and rural residential area:

Land for rural residence will amount to 715,000 ha by 2000, an increase of 60,900 ha including 39,400 ha changed from farming land, 792,500 ha by 2010, up by 138,000 ha including 97,500 ha from farming land.

Urban land will reach 107,400 ha by 2000, up by 44,100 ha including 30,200 ha from farming land, 200,700 ha by 2010, up by 137,400 ha including 90,400 farming land.

The ratio of urban land over rural residential land will change from one tenth (currently) to one fourth (2010).

5. Unused land:

2,138,500 ha and 8,522,600 ha of unused land by 2000 and 2010 respectively will be used for the following targets:

- Agriculture: 1,700,300 ha
- Forestry: 6,546,600 ha
- Special use: 232,800 ha
- Rural residential area: 35,900 ha
- Urban land: 7,000 ha

The land use plan by 2000 and 2010 is summarized as follows:

THE LAND USE ORIENTATION BY 2000 AND 2010

Unit: 1,000 ha

Kind of land	Current situation of land use		Land use plan			
			2000		2010	
	Area	Percentage	Area	Percentage	Area	Percentage
Total area of natural land	33,104.2	100.0	33,104.2	100.0	33,104.2	100.0
1. Farming land	7,367.2	22.3	8,072.6	24.4	8,821.5	26.6
2. Forestry land	9,915.1	30.0	11,045.9	33.4	16,245.8	49.1
3. Specialized land	1,122.2	3.4	1,319.5	4.0	1,583.2	4.8
4. Rural residential land	654.2	1.9	715.1	2.2	792.5	2.4
5. Urban land	63.3	0.2	107.4	0.3	200.7	0.6
6. Unused land	13,982.2	42.2	11,843.7	35.7	5,460.5	16.5

Thus, land use for forestry, special target, residence will increase by 2,138,500 ha by 2000 and 8,521,700 ha by 2010, including currently used land representing 64% of the country's natural land by 2000 and 83% by 2010.

The above-mentioned is only initially calculated to make orientation for the upcoming land use plan. The important issue is the planned mechanism and method of land use structure alteration, this depends upon the Government's macro management and the coordination of branches, levels from central to local authorities■