



La Experience Coreana en Caminos Rurales

Focusing on Rural Road Project
... its Impact in Regional Development and Socio-economy

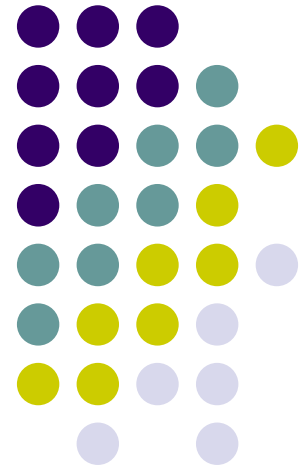
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Korea Research Institute for Human Settlements

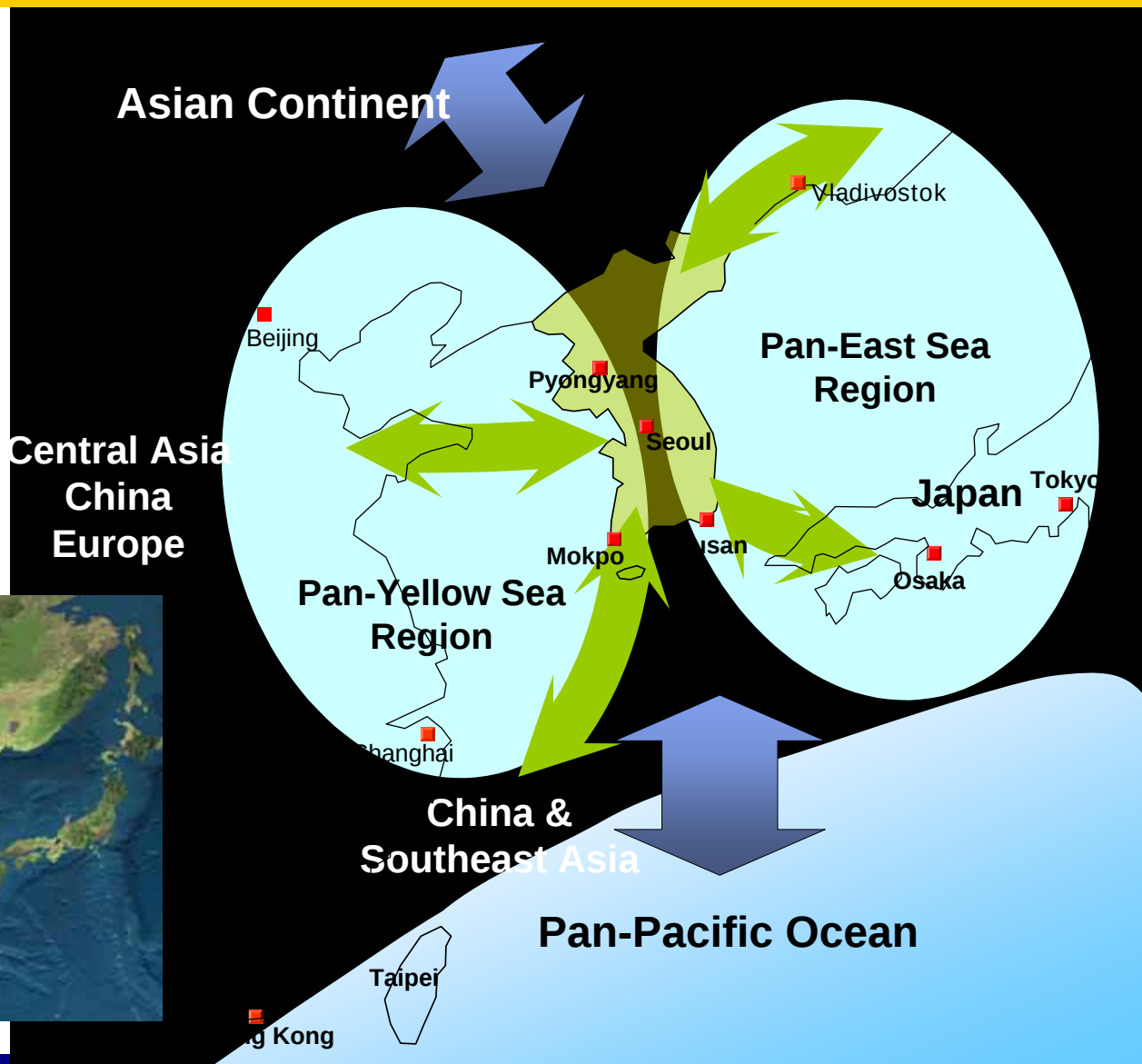
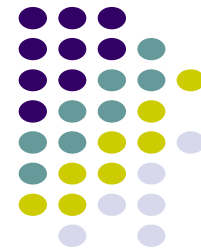
Jai Young, Ryu



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I. Background

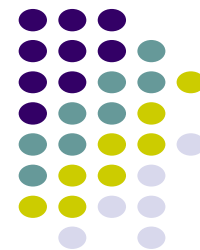


I. Background



- **Population :**
48,820,000 persons
- **Land Area :** 99,601 km²
(80% mountainous)
- **Population density**
: 490 person/ km²
- **Urbanization rate :** 89.0%
- **World's 11th largest economy**
in 2005 (GNI: 765 billion USD)
- **FIFA World Cup 4th** in 2002

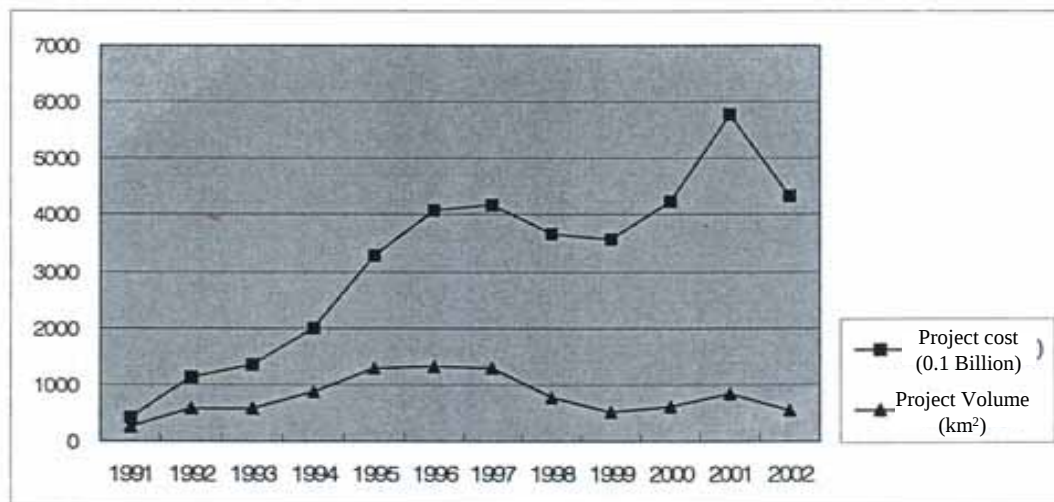
I. Background



• Rural Road Project Promotion (2001)

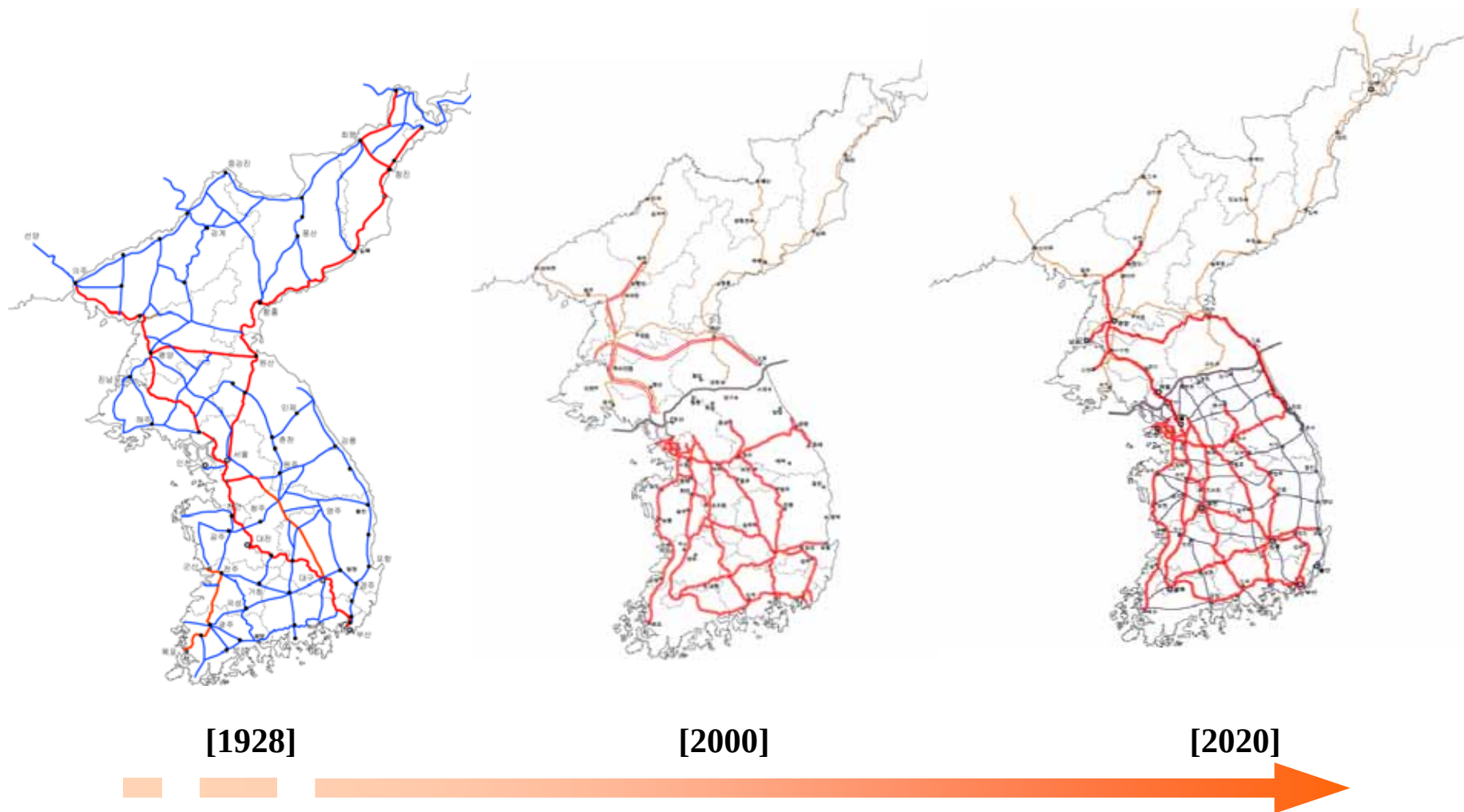
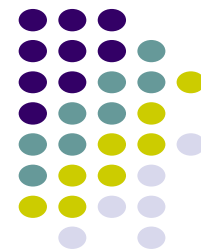
Road Class	No. of Routes		Total Length (Planned)		Total Length of Paved Roads		Total Length of Roads unpaved	Total Length by Route
Total	23,365km	100.0%	62,397.7km	100.0%	16,825.9km	27.0%	45,571.8km	2.67%
Myeon road	2,627km	11.2%	10,759.5km	17.2%	4,464.8km	41.5%	6,294.7km	4.09%
Village road	10,253km	43.9%	29,110.6km	46.7%	9,104.6km	31.3%	20,006.0km	2.84%
Farming road	10,485km	44.9%	22,527.6km	36.1%	3,265.5km	14.5%	19,271.1km	2.15%

• Rural Road Maintenance Accomplishments



- 9,398.7km by 2002 with
an investment of 3.8 trillion
Korean Won

II. Arterial Roads Development

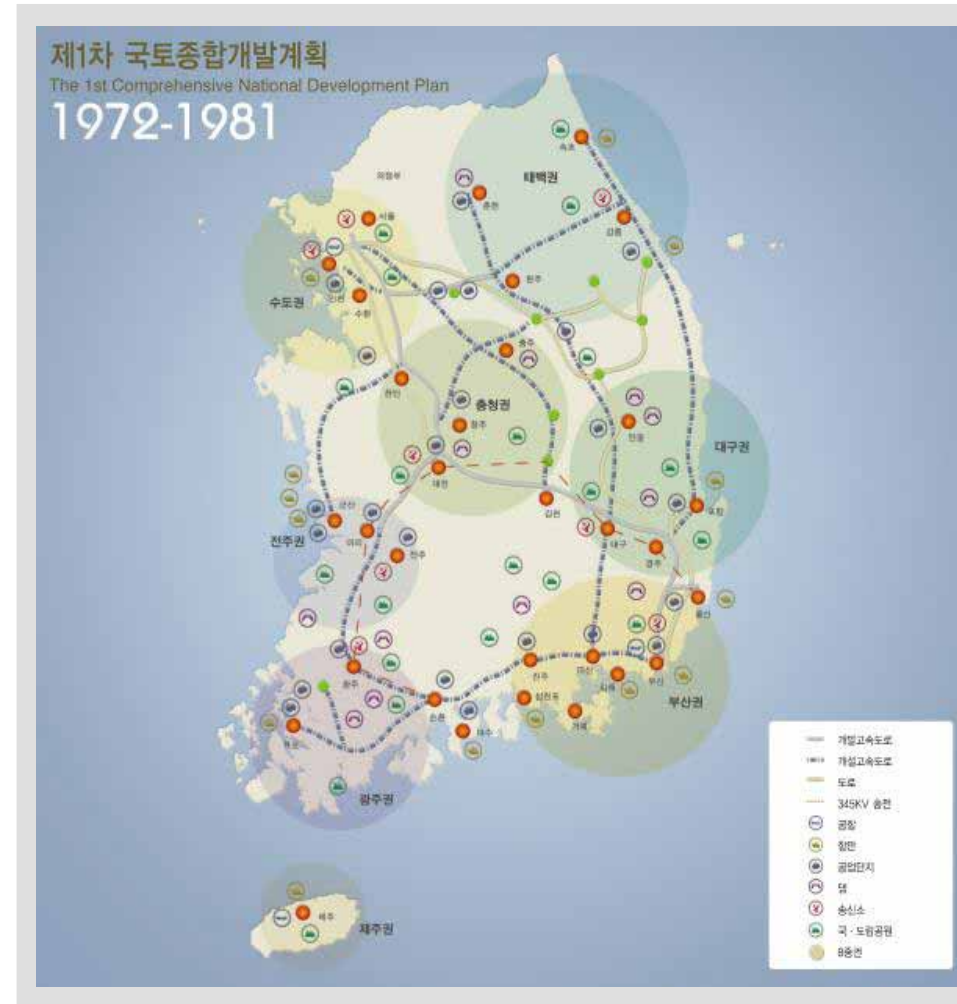


II. Arterial Roads Development



The 1st Comprehensive National Development Plan (1972-1981)

- ▶ Efficient land use
- ▶ Rapid economic growth
- ▶ Expansion of the SOC
- ▶ Construction of a large-scale industrial base

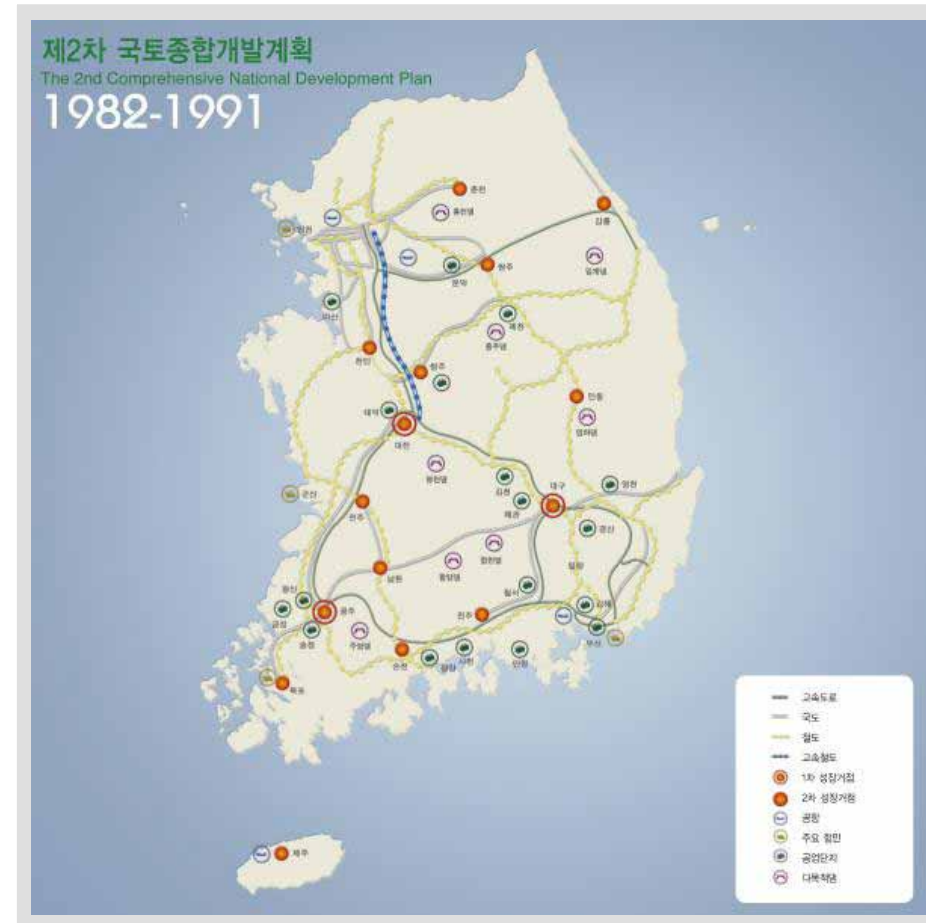


II. Arterial Roads Development



The 2nd Comprehensive National Development Plan (1982-1991)

- ▶ Restricting Capital Growing
- ▶ More balanced regional development
- ▶ Focus on the standard of living and environmental conservation



II. Arterial Roads Development



The 3rd Comprehensive National Development Plan (1992-1999)

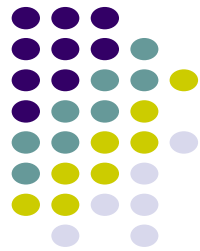
- ▶ Decentralized Territorial Structure
- ▶ Establishment of the resource-efficient land use system
- ▶ Base creation for the unification of the country



II. Arterial Roads Development

- ▶ Realization of the integrated Territory
- ▶ Balanced Territory
- ▶ Green Territory
- ▶ Open Territory
- ▶ Unified Territory

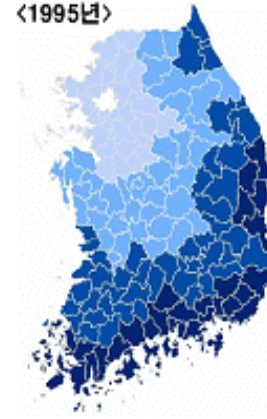
Changes of Average Access Time



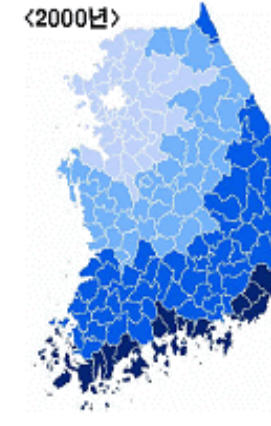
[Expressway of South Korea]



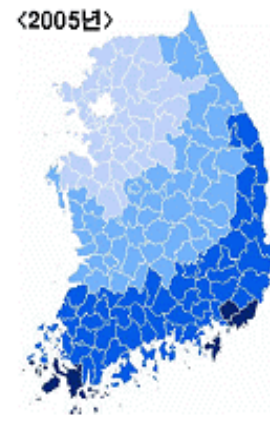
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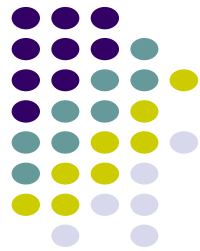
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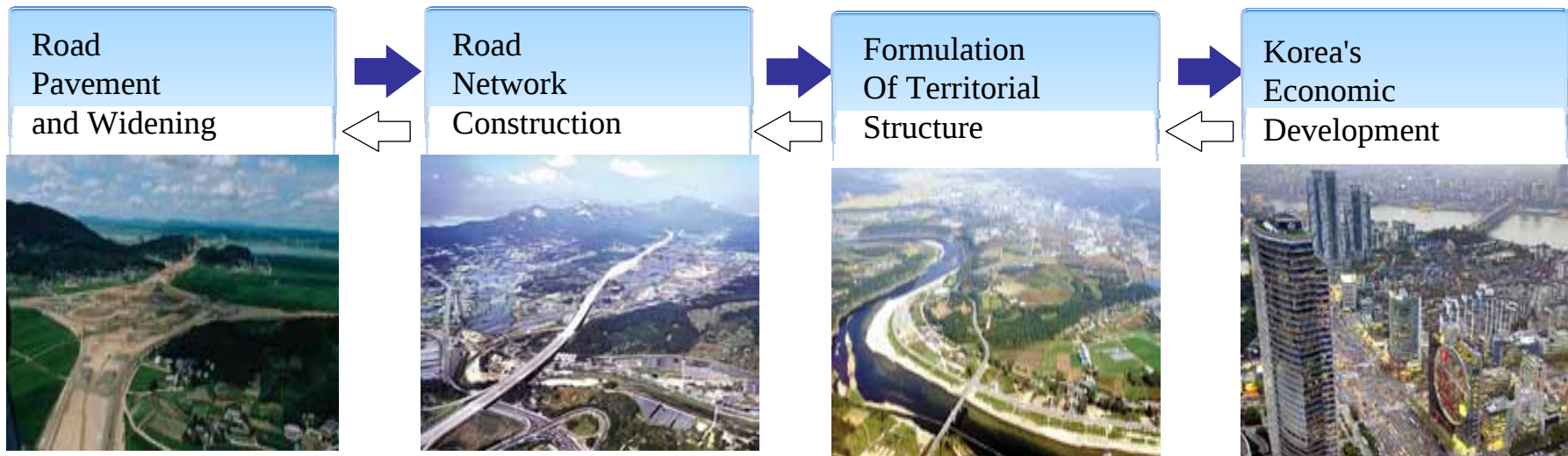
Under 100minute Over 100min ~ under 200min Over 200min ~ under 300min Over 300minute



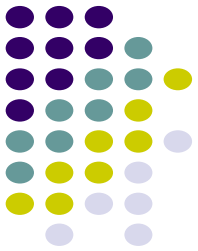
Roles of Road Pavement & Widening Project



- By concentrating on road projects, South Korea was able to lay the foundation to establish a systematic territorial structure, to expedite regional development, and to develop industries and economies in a short period.
- Road pavement and widening, a major project at the early stage of road policy of Korea, played a important role in constructing a systematic road network.



III. Effects of Road Projects



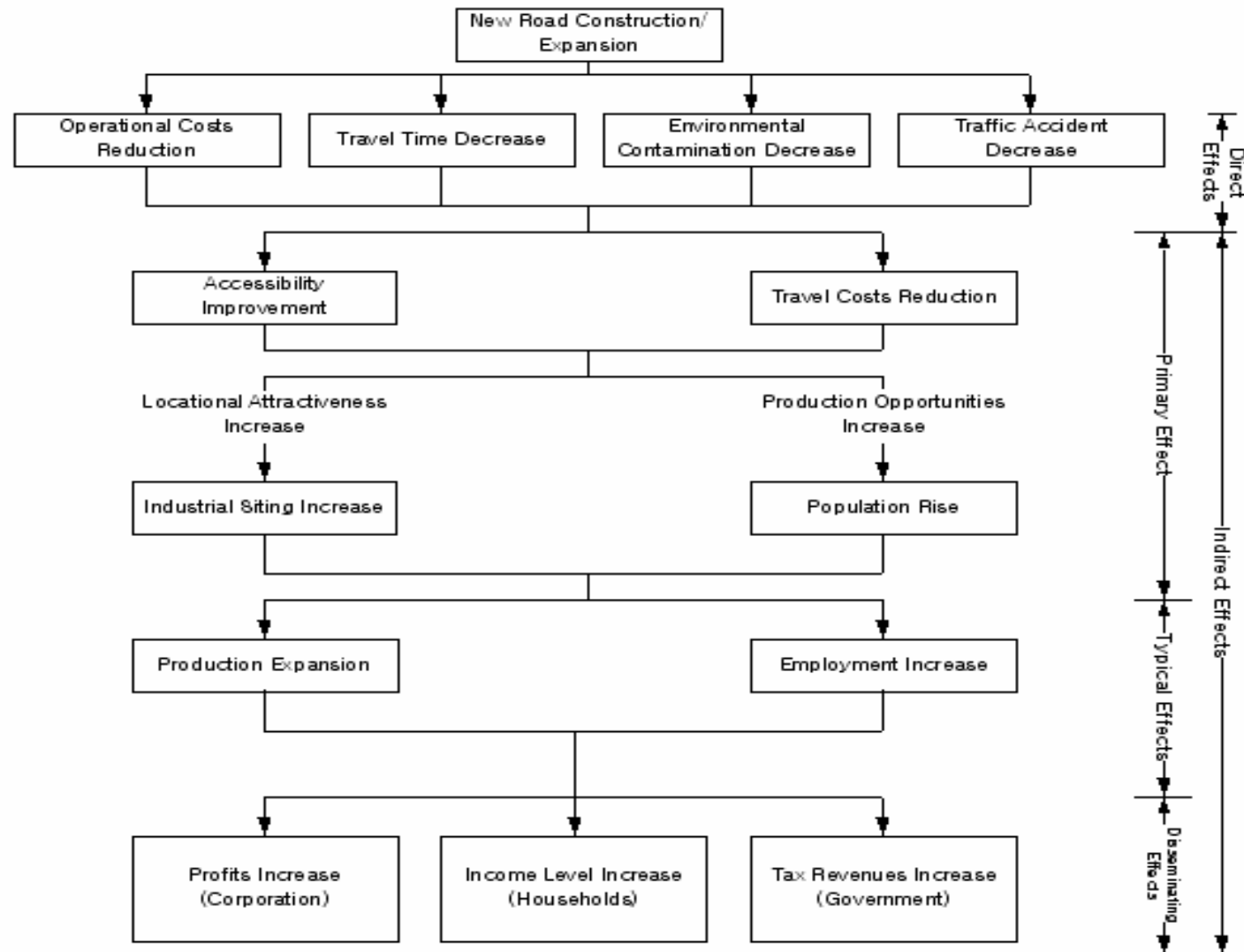
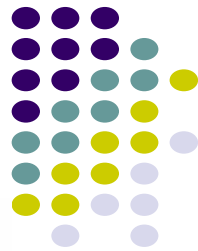
- **Macro-effect**

- Change in spatial structure such as urban and regional structure
- Change in regional developmental potentials/ Facilitate tourism and development for tourist
- Change in industrial location pattern

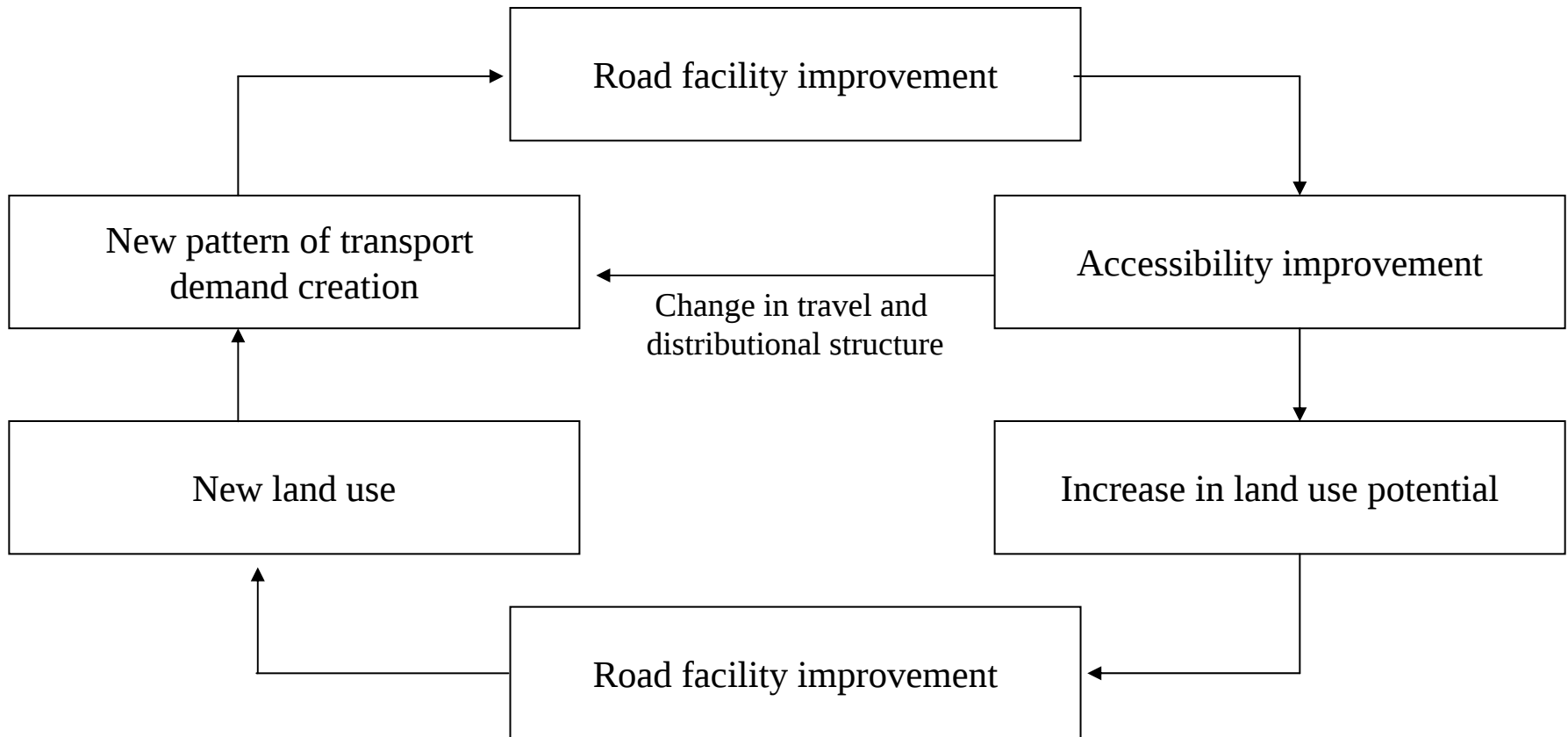
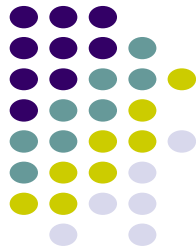
- **Micro-effect**

- Land use efficiency improves
- Enhance convenience in daily life of the people
(Reduction in travel time)
- Income increase
- Increase in tax revenues of local governments

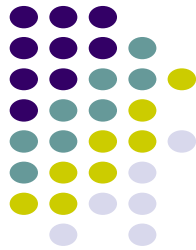
Disseminating Effects of Road Facility Expansion



Chain Effects of Road Facility Expansion Project



Classification of Road Project Effects

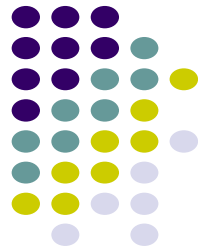


- **Effects : Direct and indirect / Macro and micro effects/ Quantitative and qualitative effects / by stages: Planning, construction and operation stage**

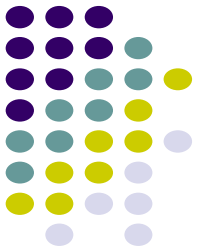
※ Results of Survey among Transportation Experts

(Priority Order of Impact Analysis and Evaluation)

- **Direct Effects :** ① saving time ② operational costs reduction ③ traffic accident decrease ④ traffic volume increase ⑤ accessibility increase
- **Indirect Effects :** ① regional development promotion ② employment increase ③ factories increase in number ④ tourists increase in number ⑤ public service facilities increase ⑥ population increase ⑦ Population and households increase in number



- Activate existing industrial zones
- Contribute to construct new industrial facilities
- Decentralize the location of industrial facilities from metropolitan cities
- Encourage reallocation industrial facilities of the region concerned
- Increase employment and regional income
- Reduce travel costs and time of passengers
- Reduce production costs following logistics costs reduction/
Sharpen global competitive edge of the product



Enhancement of accessibility and mobility for rural areas

- Encourages development of rural areas and tourist attractions
- Facilitate development of underdeveloped areas
- Increase relationship and communication between urban and rural areas
- Improve the quality of people's daily life
- Support formulation and prosperity of cities, towns, and villages

IV. Rural Road Projects & Economic Development



- **Functions of Rural Feeder Roads**

- Provide vitality to overall rural economy
- Trigger disseminating effects

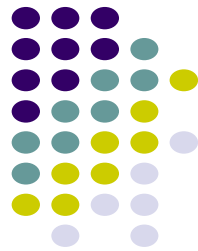
- **Objectives of Rural Feeder Road Projects**

- Create a production base for rural areas; Improve living environment
- Increase local residents' income; promote balanced regional development; step up competitiveness of the agricultural, forestry and fishery industry

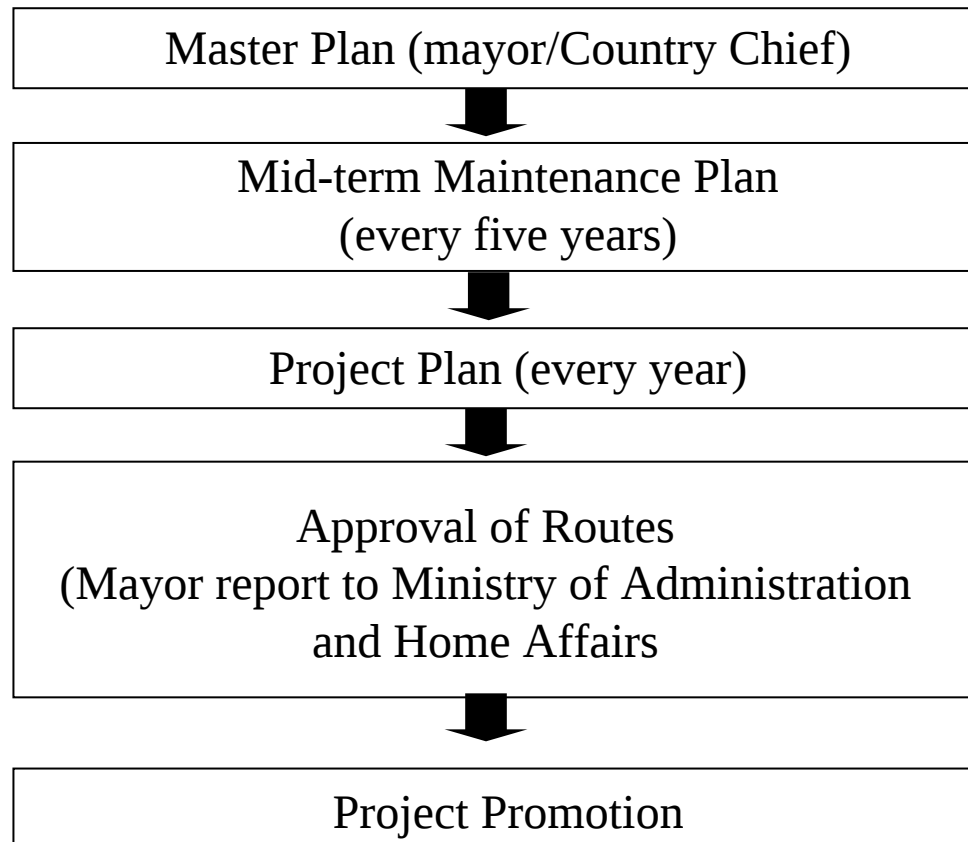
- **Rural Feeder Roads of Korea categorized into three classes**

- Myeon-road : Roads connecting a village to public institutions such as Eup and Myeon Offices
- Village-road : Roads linking one village to another
- Farming-road : Roads connecting a village to farm land

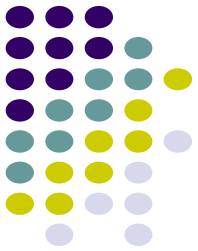
IV. Rural Road Projects & Economic Development



Promotion System for Rural Road Development & Maintenance Project

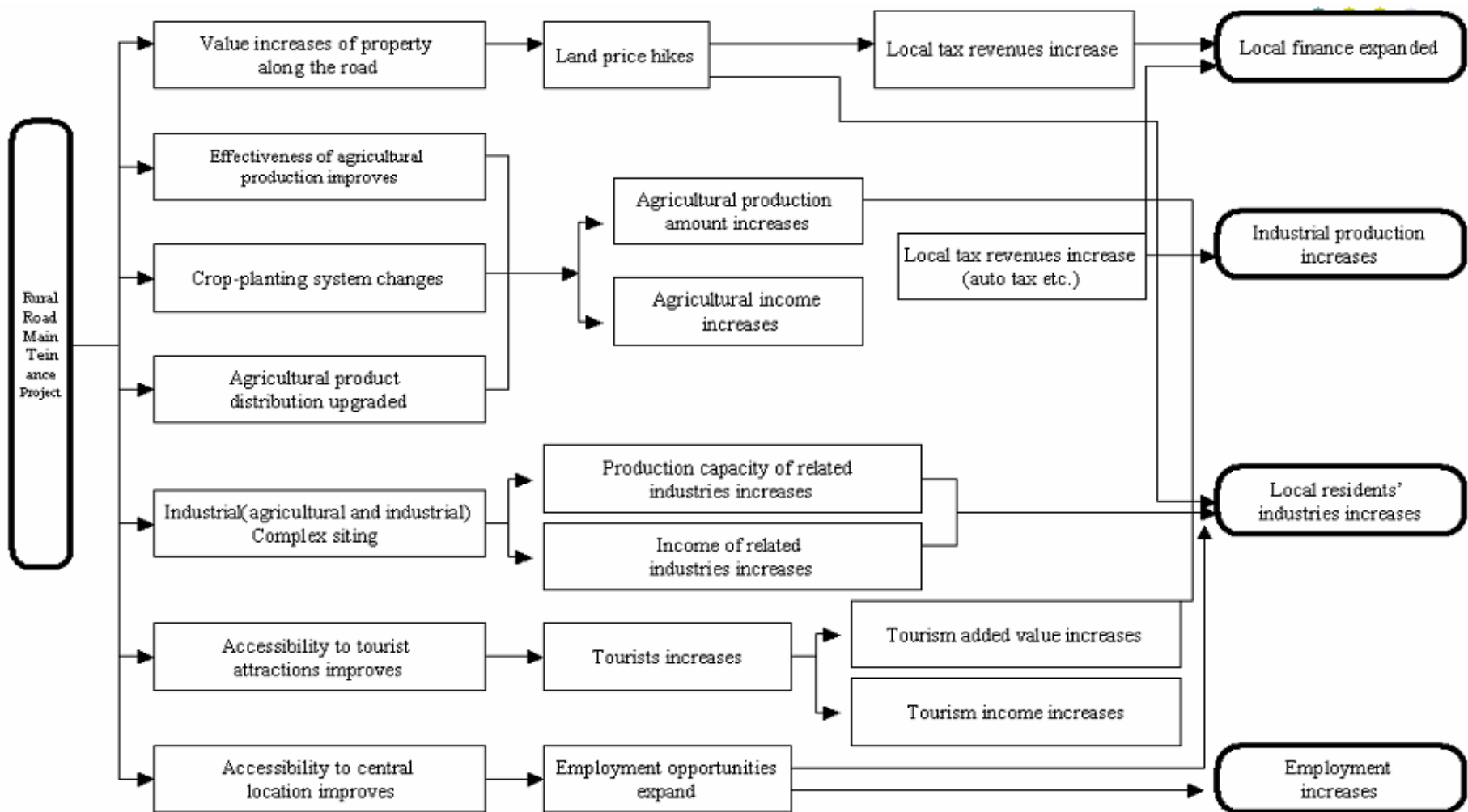
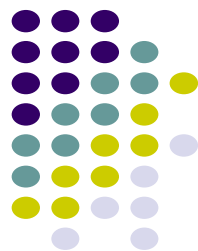


Effects of Rural Road Projects

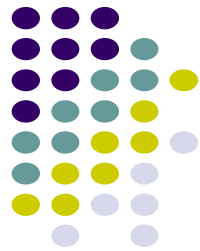


- Increase accessibility to rural areas and nature resources from urban areas
- Improve agricultural product distribution
- Increase tourists
- Increase land price
- Increase products
- Encourage influx of industries
- Increase employment
- Improve regional finances

Effects of Rural Road Projects

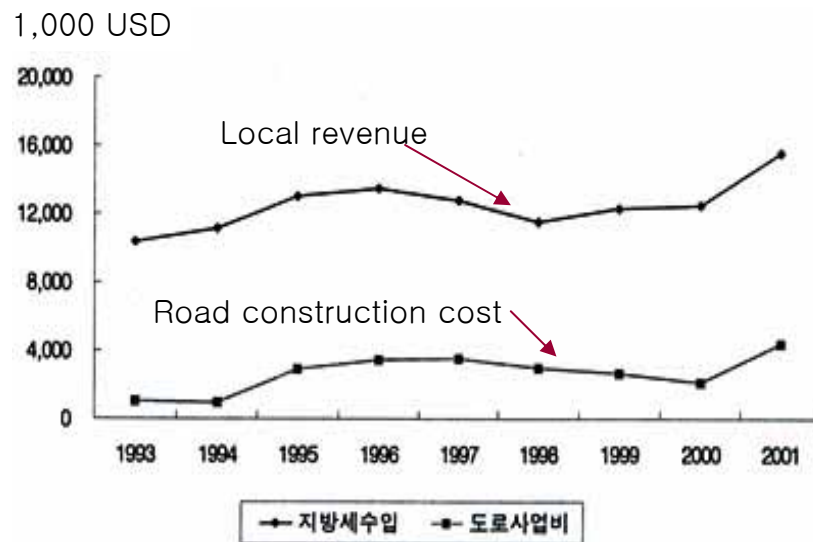


Financial Effects of Rural Road Projects

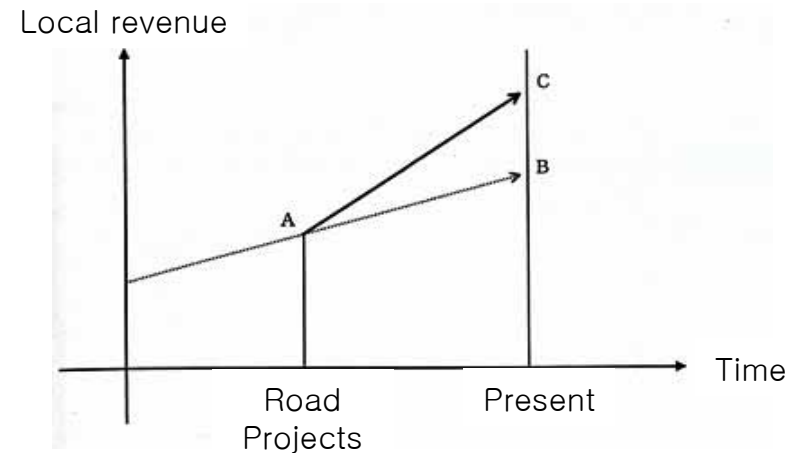


Regional finance expansion

- By increase in population, income and consumption in rural areas, provincial tax revenues increase (auto tax, tobacco consumption tax, etc.).
- By the increase of price of land and real estate property, local tax revenues increase (acquisition tax, registration tax, integrated land tax, property tax, etc.).



[Trends in Road Project Costs and Local Tax Revenues
(Yeongdong, Chungbuk Province)]



A: Point at which rural road projects commenced

B: Current state without rural road project

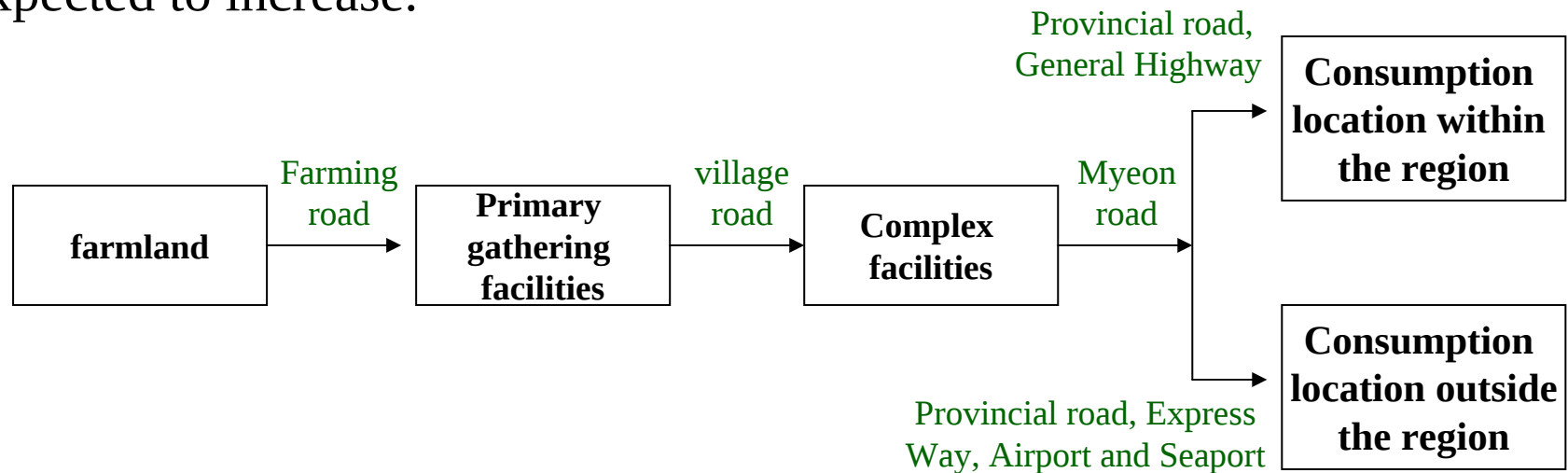
C: Actual current state with rural road project

Distance between B and C: Additional local tax revenues following rural road development project

Revitalization of Regional Agriculture

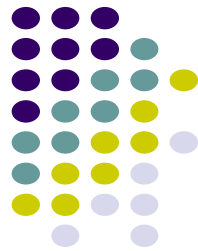


- As efficiency of agricultural production and labor productivity improves, agricultural income increases.
- Improvement in transportation conditions enables people to grow new high-income crops, revitalizing regional agricultural industry
- As agricultural product distribution improves, agriculture added value is expected to increase.



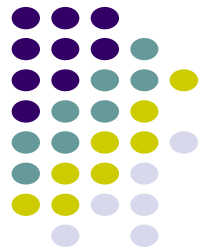
[Relationship between Rural Roads, Production and Distribution Facilities]

Type and Characteristics of Benefits



Type	Measurable Benefits	Non-Measurable Benefits
Living Benefit	Travel time and costs saving	Convenience and accessibility to Public & Society facilities Enhancement
Agricultural Benefits (Production Aspect)	Crop-planting pattern change, Protection against dust, Mechanized agriculture, Depreciation and movement time reduction	Work convenience Enhancement
Agricultural Benefits (Distribution Aspect)	Product damage prevention, Transport time reduction, Transport loads increase	Distribution rationalization, Change in available and selective transport modes
Other Benefit	Road maintenance costs saving	Expansion of urban and rural relationship, Encouragement of settlements Asset value increase

Case Studies

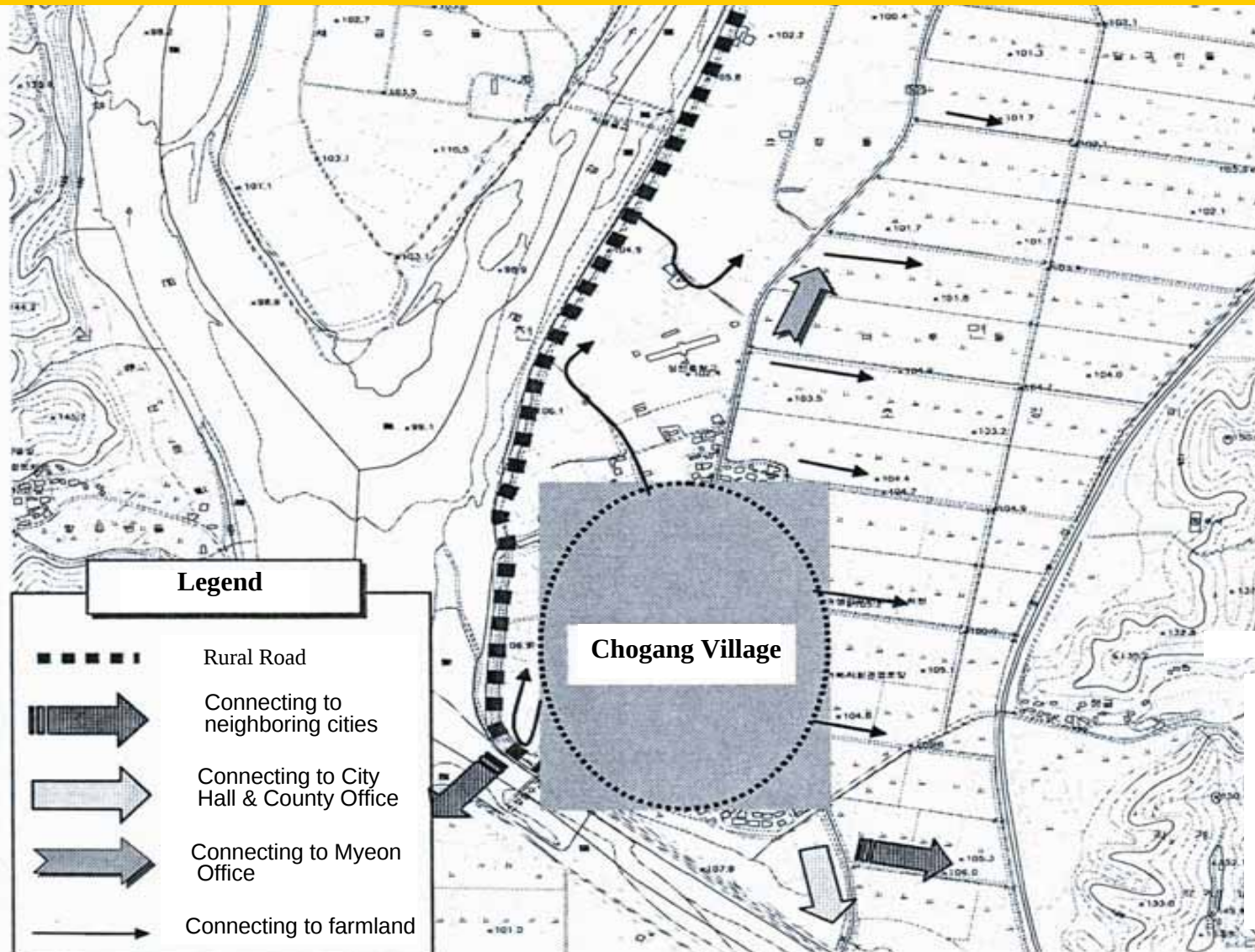
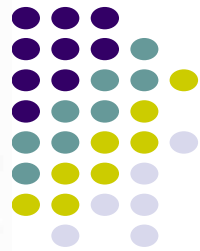


- Yeongdong of Chungbuk, Gochang of Jeonbuk and Milryang of Gyeongnam

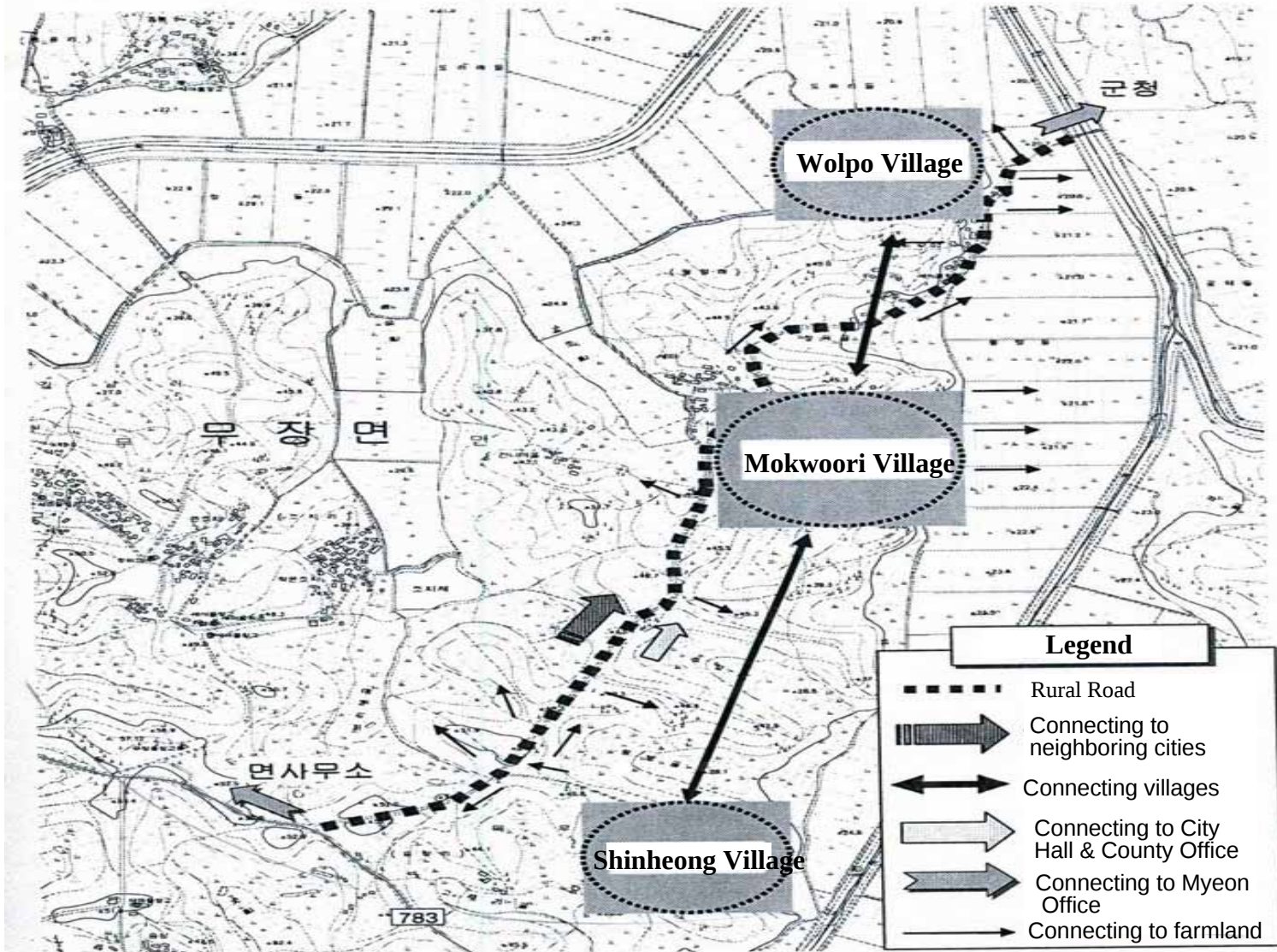
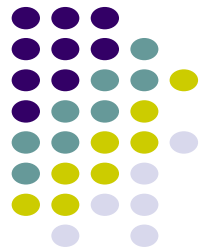
Location	Route Name	Total Length (km)	Function upon planning (Current Function)	General Information (direct+indirect zone)
Shimcheon-myeon, Yeongdong	Shimcho (Case 1)	3.2	Farming-road (Farming-road)	- Village : 1+2 - Population(person) : 755 +1,152 - Cultivation Area (ha) : 157
Mujang-myeon, Gochang	Mokwoo (Case 2)	2.5	Village-road (Myeon road, Village road +Farming Road)	-Village: 3+13 - population(person): 224+1,632 -Cultivation Area (ha) : 228.6
Sangnam-myeon, Milryang	Jeoum (Case3)	2.5	Village-road (Village road +Farming Road)	-Village : 1+2 -Population(person) : 132+203 -Cultivation Area(ha) : 53

Nnote : The total length of the road is 2.9 km on average. It took 4.2 years to complete the construction, and projects were implemented 2.8 times for the construction.

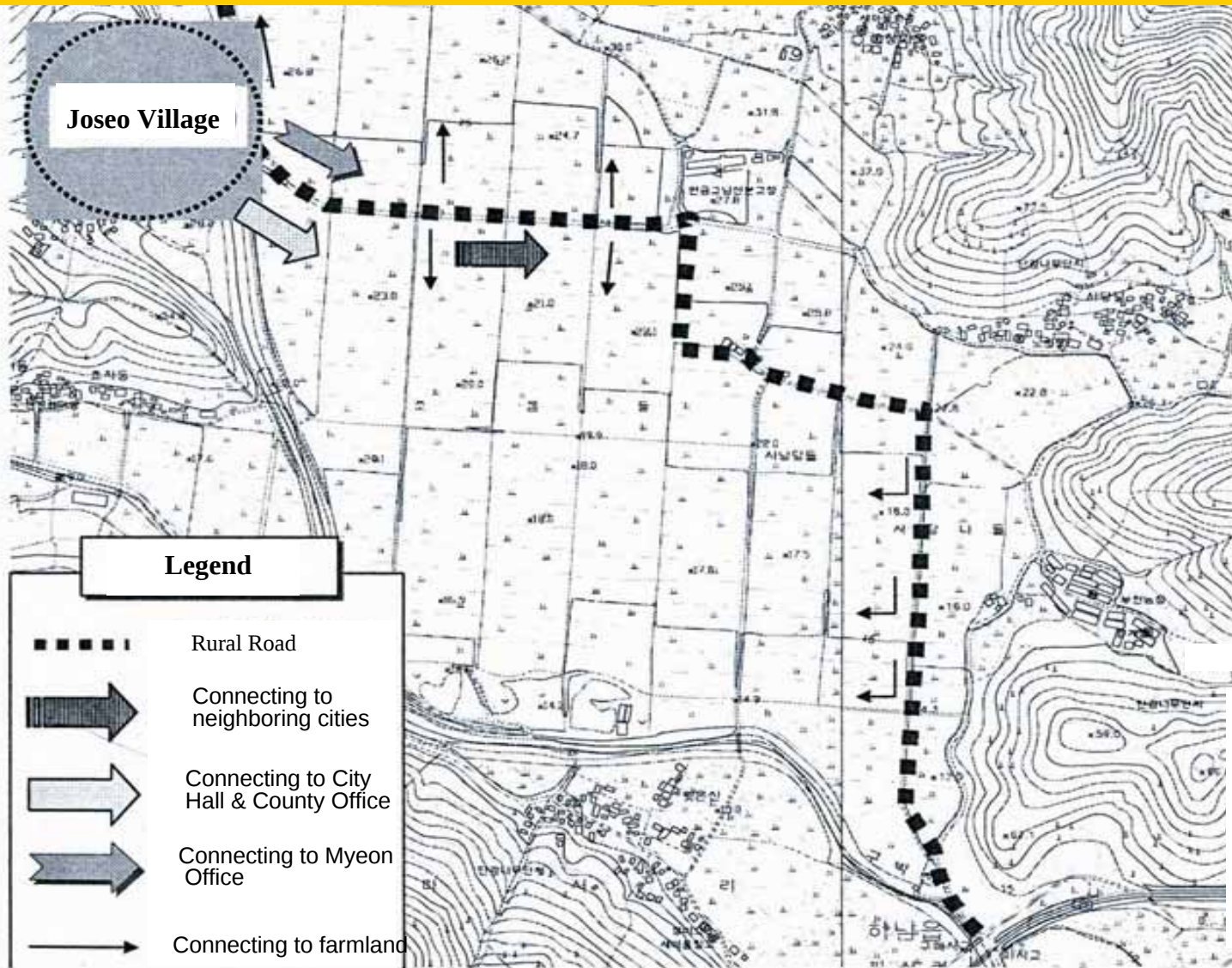
CASE 1: Shimcho



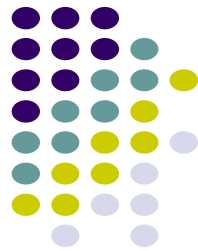
Case 2: Mokwoo



CASE 3: Joeum



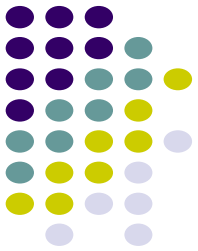
Benefits of Road Projects in Case Studies



- Benefits per km from the road projects cited in the case study are 17,556 (USD) for Joeum, 34,884 (USD) for Mokwoo and 56,855 (USD) for Shimcho.
- Benefits of a total of 9 rural roads of the three case study areas are average 92,264 (USD) per route, and 32,185 (USD) per km.

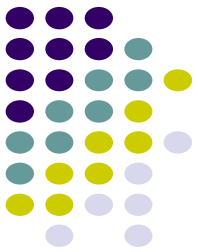
Category		Mokwoo	Shimcho	Joeum
Travel Time & Costs Saving	Amount of the Effect	42,108	102,586	32,080
	Amount of the Effect Per km	16,843	32,058	12,832
Protection against Dust	Amount of the Effect	893	1,661	628
	Amount of the Effect Per km	357	519	251
Farming time & Costs Saving	Amount of the Effect	5,880	6,666	3,020
	Amount of the Effect Per km	2,352	2,083	1,208
Freight Damage Prevention	Amount of the Effect	27,163	54,058	2,735
	Amount of the Effect Per km	10,865	16,893	1,094
Loads Increase & Transport Hour reduction	Amount of the Effect	6,283	7,530	1,933
	Amount of the Effect Per km	2,513	2,353	773
Maintenance Costs Saving	Amount of the Effect	4,883	9,434	3,495
	Amount of the Effect Per km	1,953	2,948	1,398
Total	Amount of the Effect	87,210	181,935	43,891
	Amount of the Effect Per km	34,884	56,855	17,556

Assessments from Local Residents



- Distributions of use of rural roads: moving products 33.5%, Farming 17.8%, go to the market 14.6%, Commute to work 13.9%, go to hospital 8.9%, Commute to school 3.9%, and visit neighboring cites 5.0%
- Effects of rural roads: time saving 55.9%, agriculture convenience 12.5%, damage reduction of vehicle 9.6%, dust reduction 8.5%, damage reduction of products 7.1%
- Needs of facilities: Road 27.0%, living environmental 15.3%, water supply and sewage 13.5%, social welfare 13.2%, dumping ground 9.6%, medical facilities 9.3%

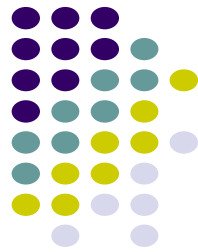
V. Future Directions of Rural Road Projects



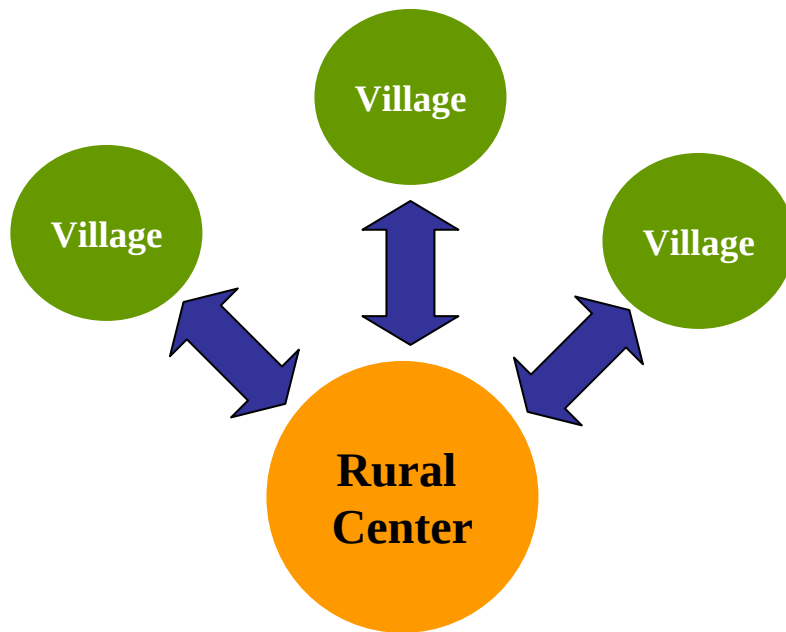
Physical aspect

- Functions : Support integration and communication of the rural areas
 - Connect with the road network within regions (rural centers, remote villages, and farm land)
 - Support activities and convenience
 - Increase safety for Residents, road users, and the vulnerable groups (the elderly and children, etc)
 - Consider structure and characteristics of the rural society such as age and occupations
- Preserve existing topography and habitations and Harmonize with a target region environment
- Consider various environment and functions and potentials for rural areas

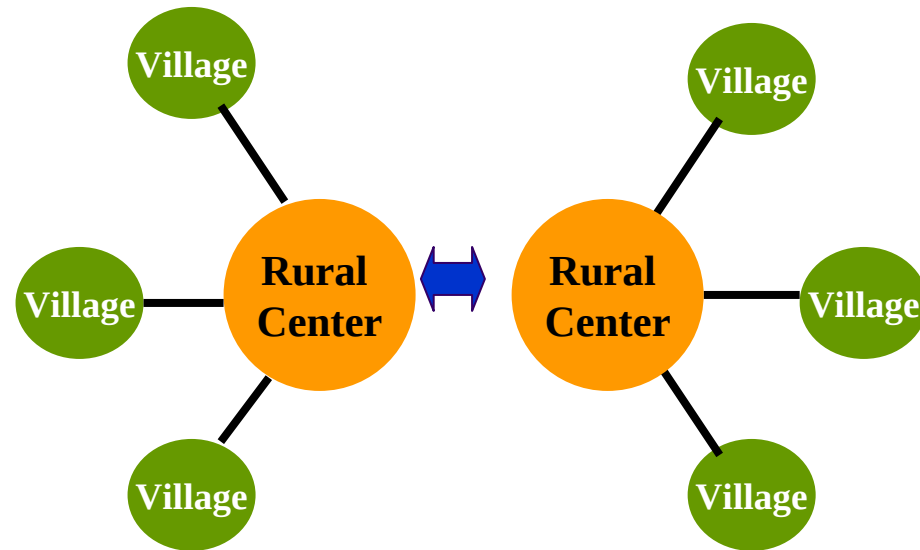
V. Future Directions of Rural Road Projects



- Considerations for automobile transport : intersect with relevant upper-level roads, link to traffic flows of different characteristics

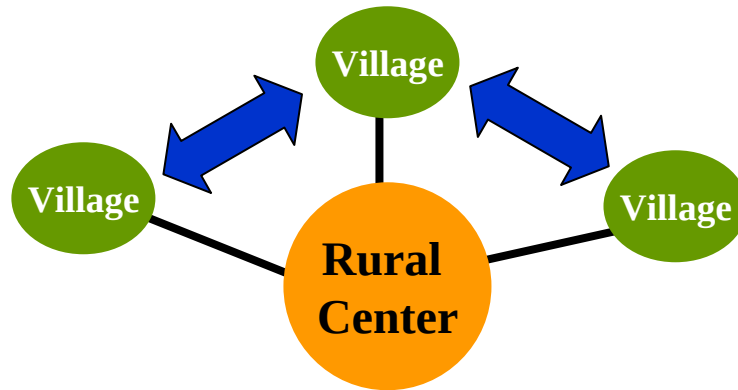
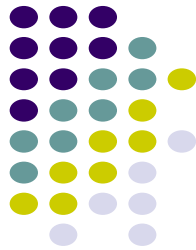


[Rural Road Network 1]

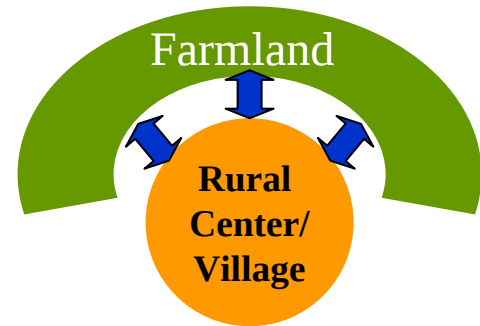


[Rural Road Network II]

V. Future Directions of Rural Road Projects



[Rural Road Network III]



[Rural Road Network IV]

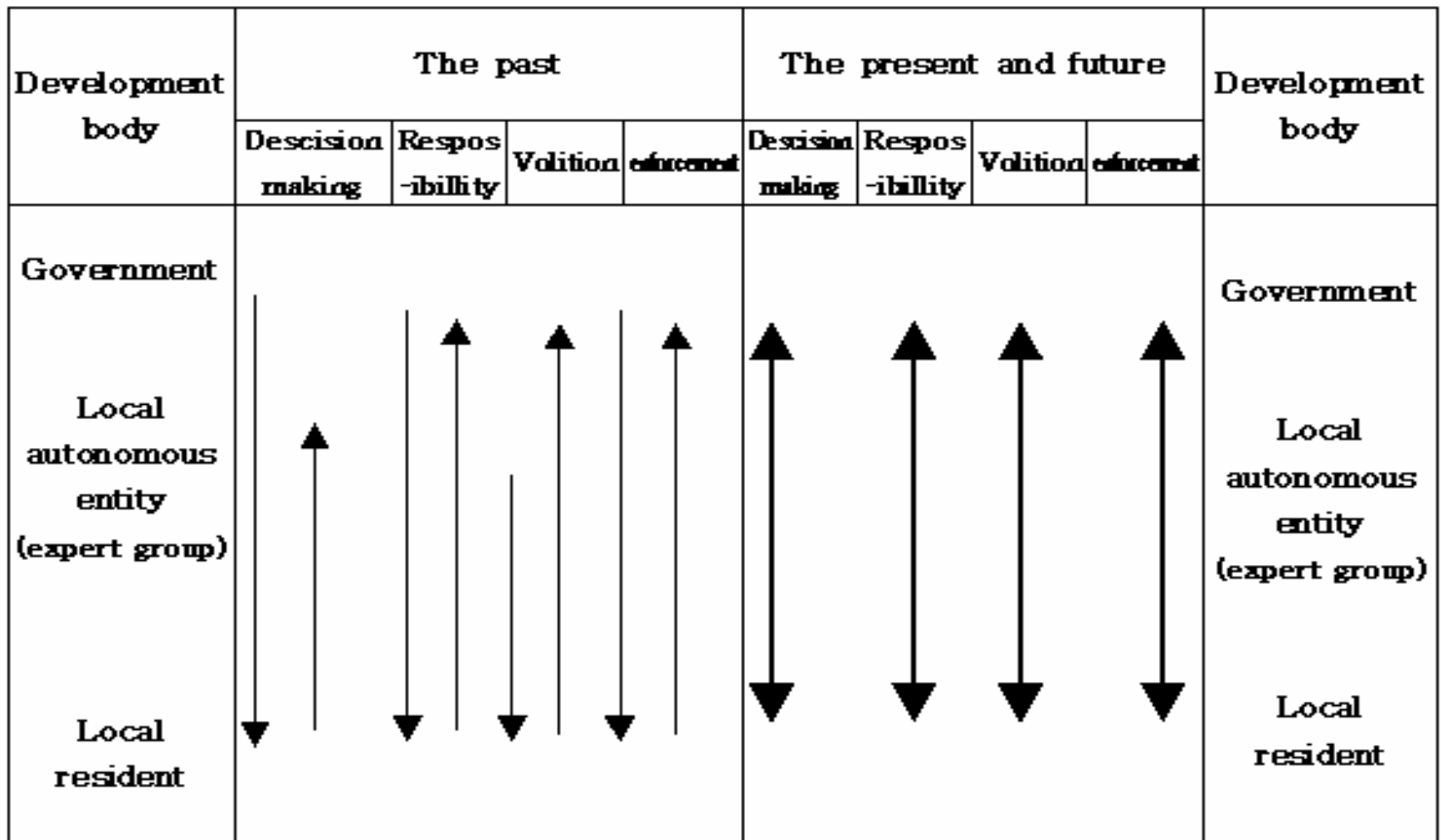
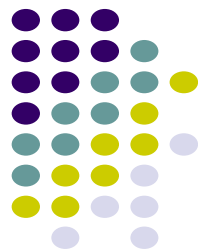
Socio-economic Aspect

- Identify road use's characteristics and regional characteristics
- Improve safety for pedestrians and bike riders

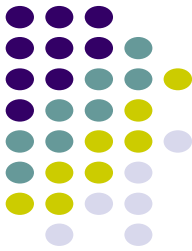
Environment-friendly Transportation system

Consider the use of environment-friendly materials for road landscape, nature and ecosystem

V. Future Directions of Rural Road Projects

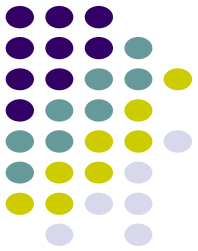


VI. Suggestions



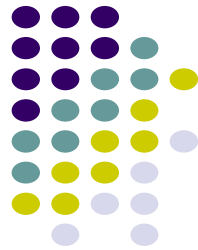
- **Project Promotion should be Expanded and Accelerated**
- **Project Promotion Efficiency should be Improved**
- **Decision-making Process for the Priority Order of Projects should be Enhanced**
- **Division of Functions should be Clarified among Roads**
- **Facilities Required by Local Residents should be Preferably Developed ; Their Priority order should be Reflected upon**
- **Funds for Road Maintenance and Repair Work should be Separately Earmarked**
- **Cooperation between Local Governments and Residents / Farmers should be reinforced ; Support from the Central and Metropolitan City Governments should be Strengthened**

Saemaul Undong Movement

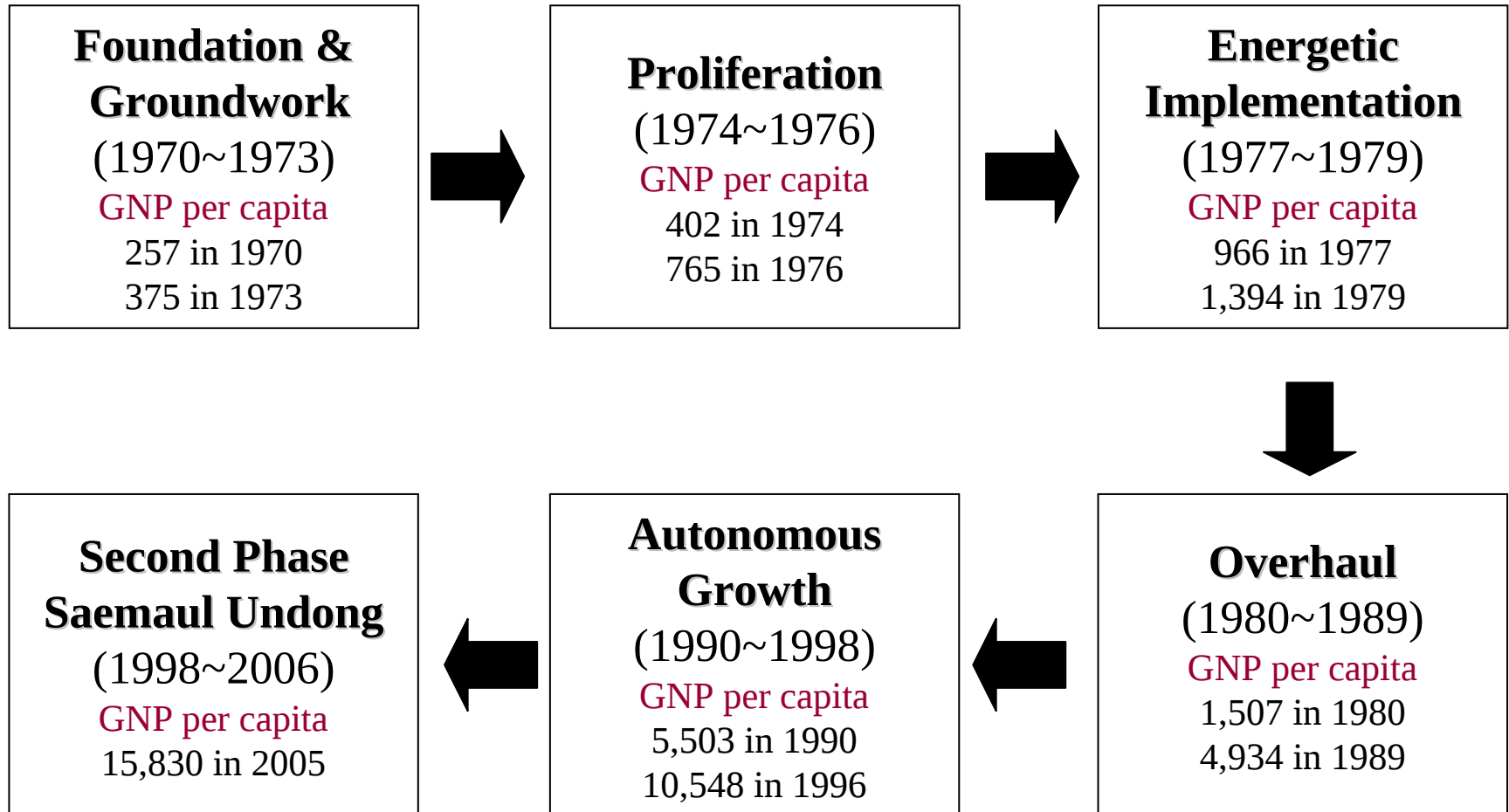


- **Basically, Saemaul Undong Movement is a movement seeking community development and modernization.**
 - Not working for only myself, but for my village and for my country
- **Goals of Saemaul Undong**
 - Modern, comfortable and convenient social community.
 - Establish cooperative and trusting working environment.
 - Sound and healthy society having pleasant and intimate relationships.
 - Participation in the construction of proudful nation
- **Saemaul Undong's Guiding Spirit**
 - Diligence
 - Self-help
 - Cooperation

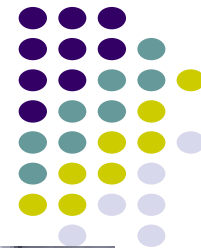
Saemaul Undong Movement



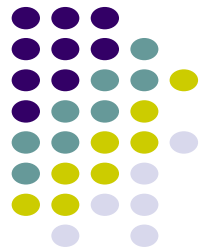
[Development by Stage]



Saemaul Undong Movement



Achievements of Saemaul Undong Movement



Achievements of Saemaul Undong Movement



Gracias !!

Thank you

