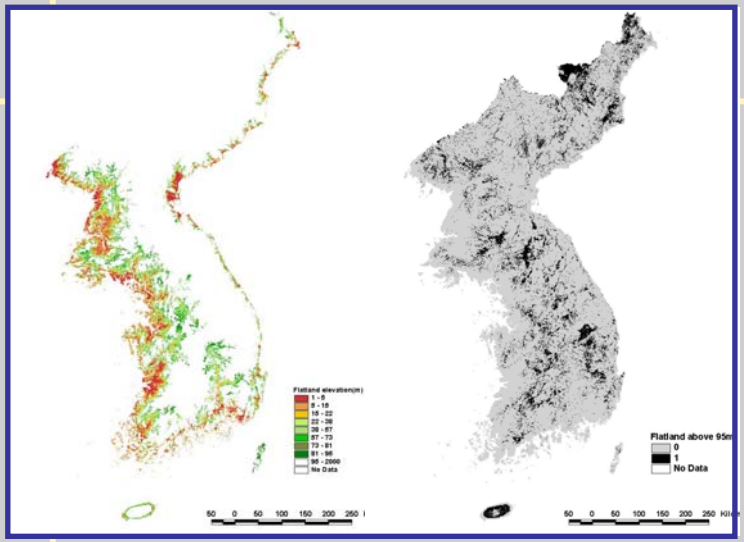
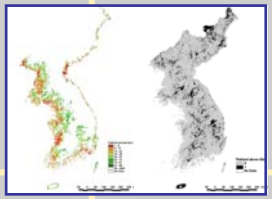


The spatial distribution of land use potentials and its implication for land use changes and policies in Korea

Park, SooJin

(Department of Geography

Seoul National University)



Contents

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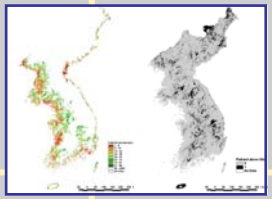
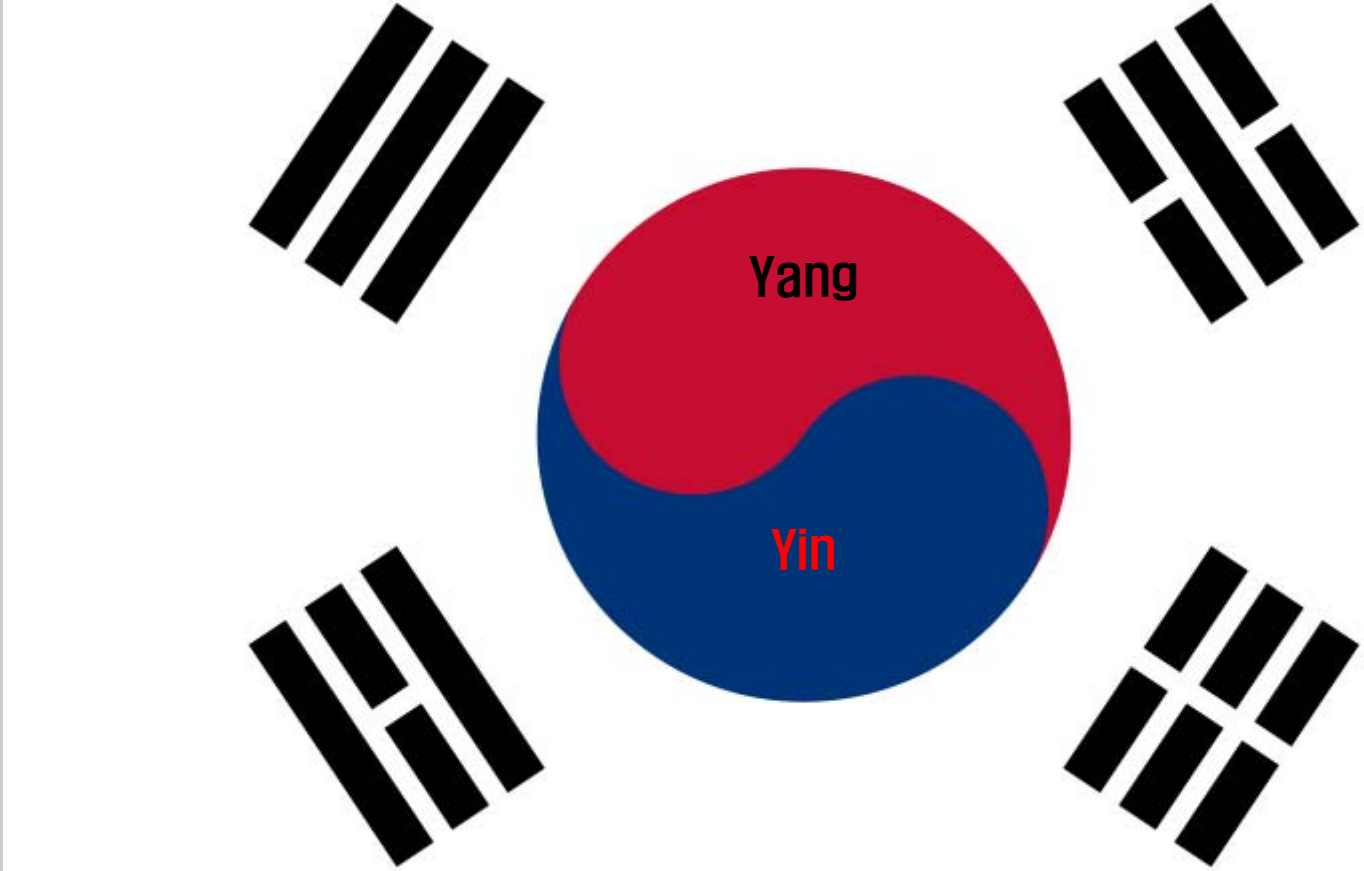
2. The General Characteristics of Korean Landforms;
3. Land Use Potentials and Land Use Changes of Korea;
4. Land Use Potentials and Land Use Changes in the Haean Basin;
5. Where are we heading to ?



Where are we ?

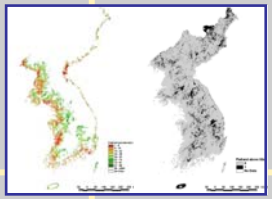
Geon: Sky, humanity, metal, justice

Gam: Moon, intelligence, water, vitality



Ri: Sun, courtesy, fire, wisdom

Gon: Earth, righteousness, earth, fertility



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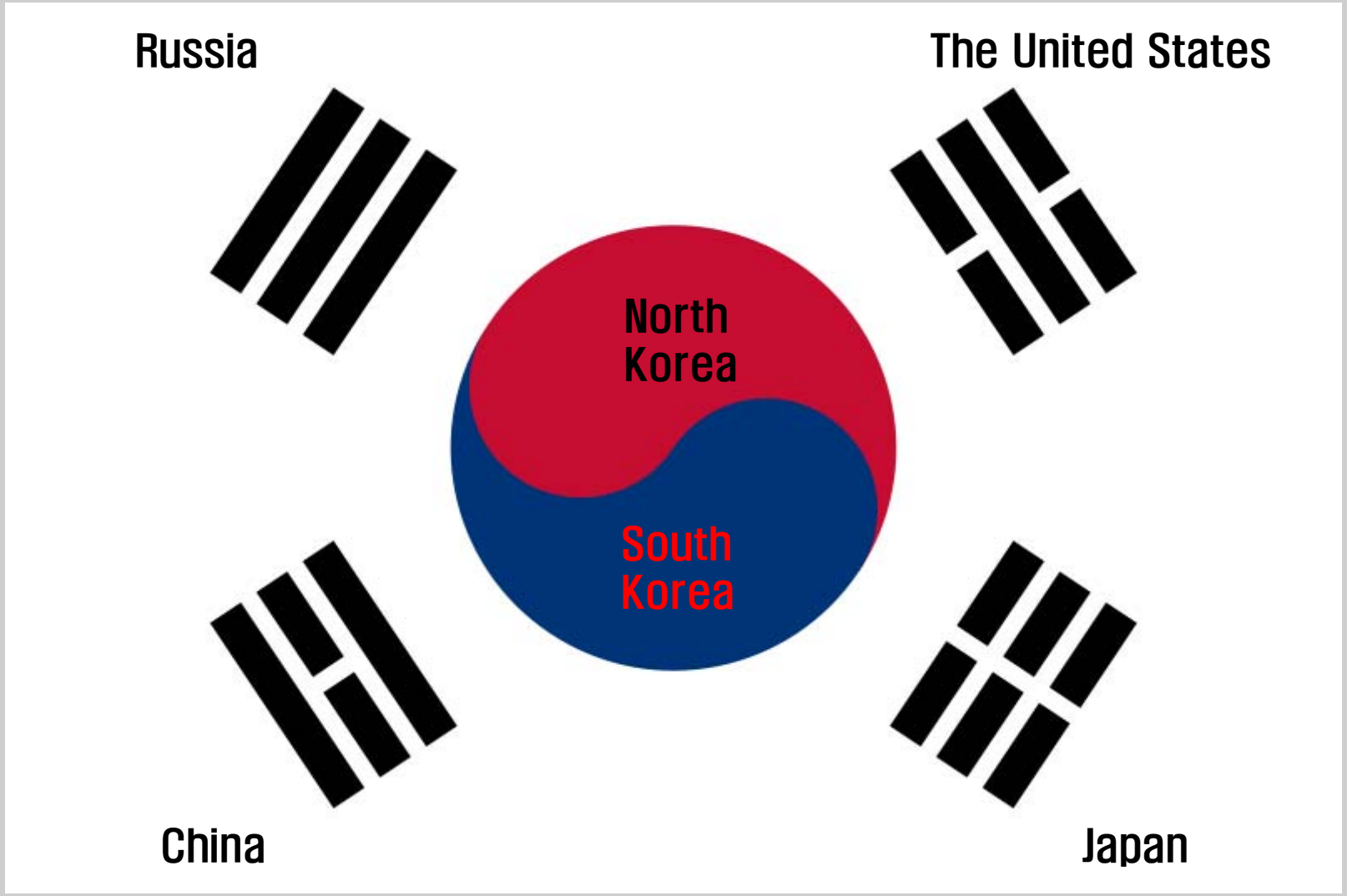
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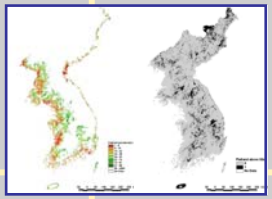
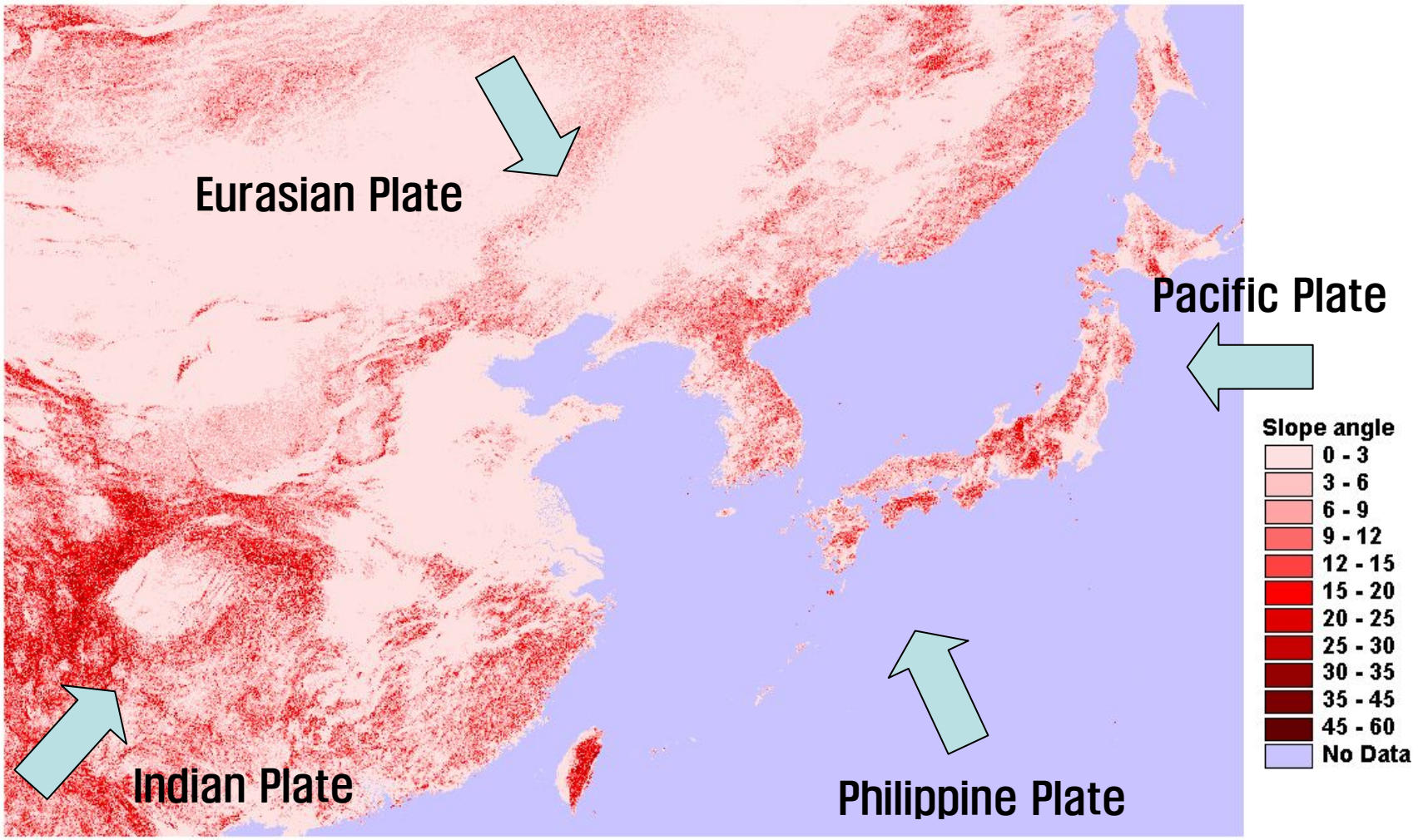
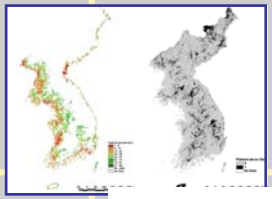
The United States
North
Korea
South
Korea
China
Japan



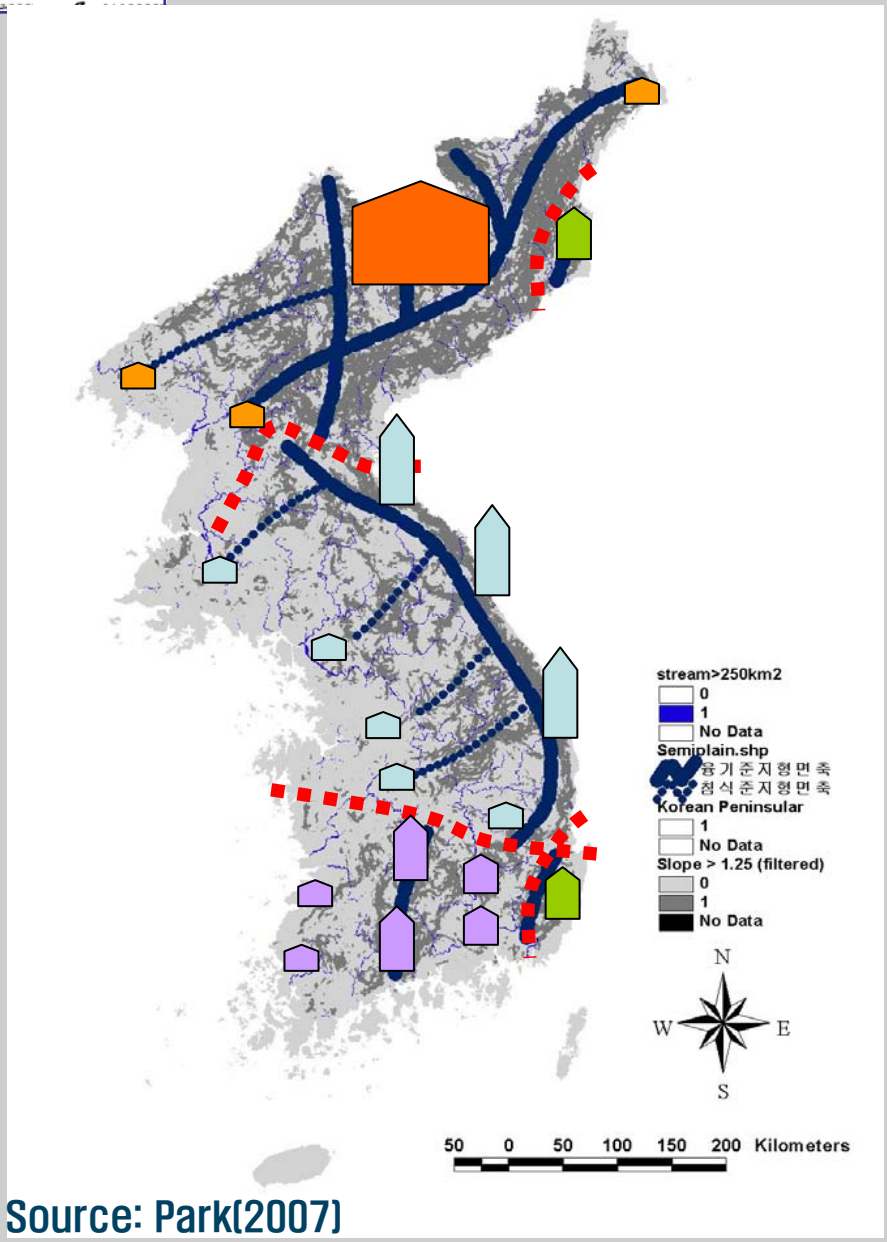
Where are we ?

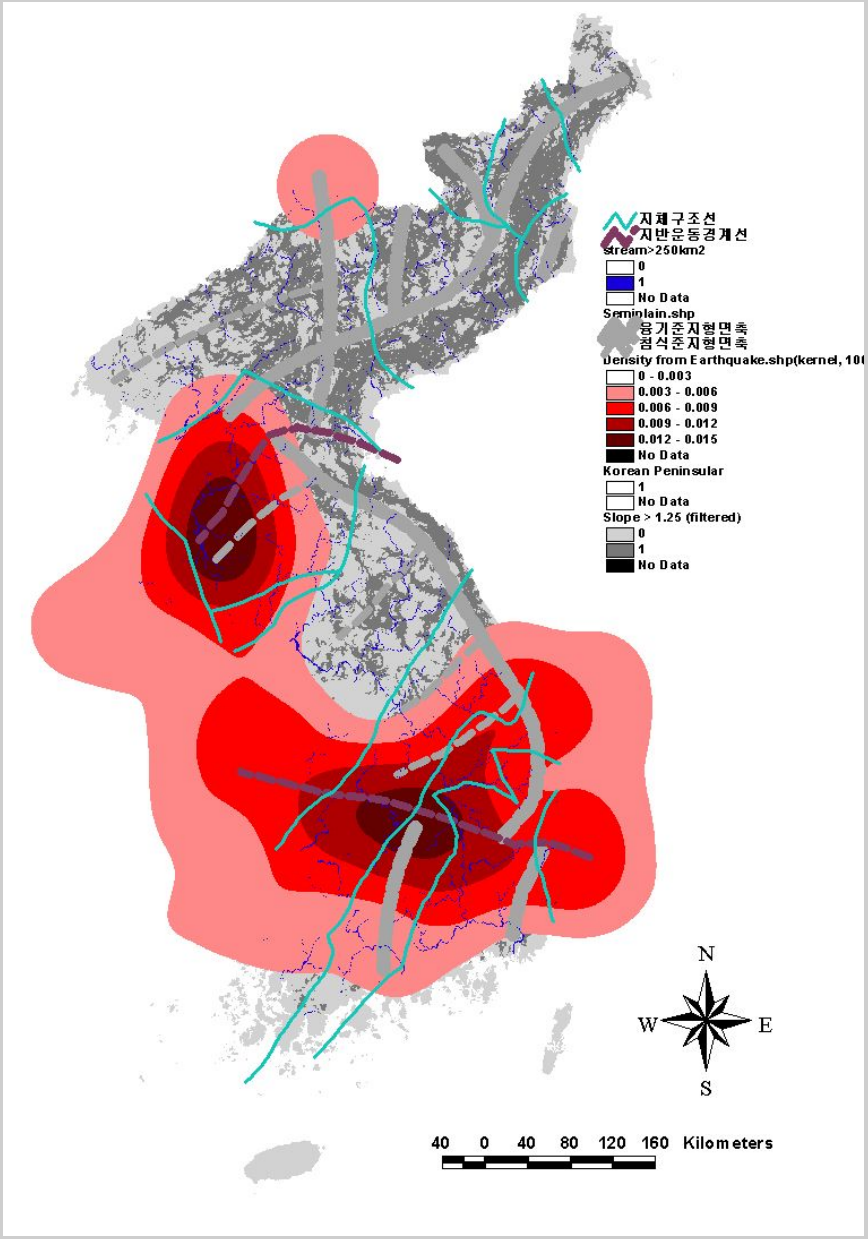


Source: calcuated from SRTM-DEM

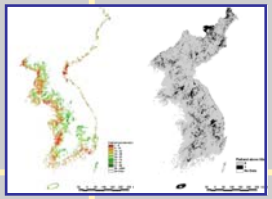


Uplift Patterns and Mountain systems



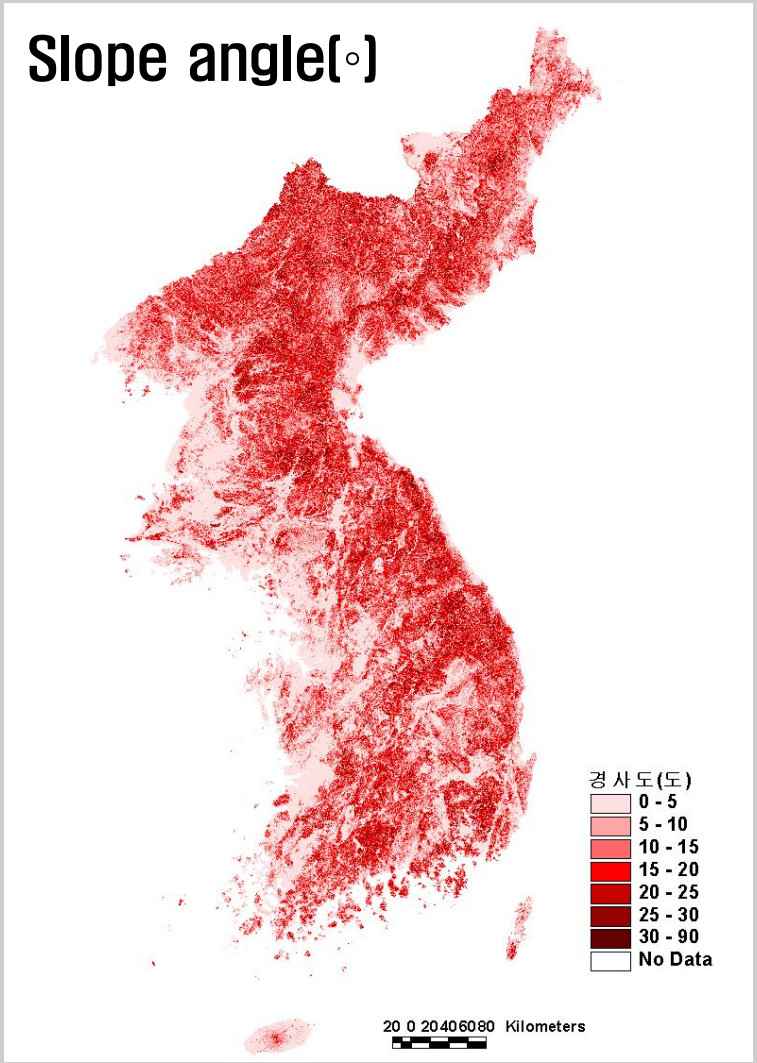


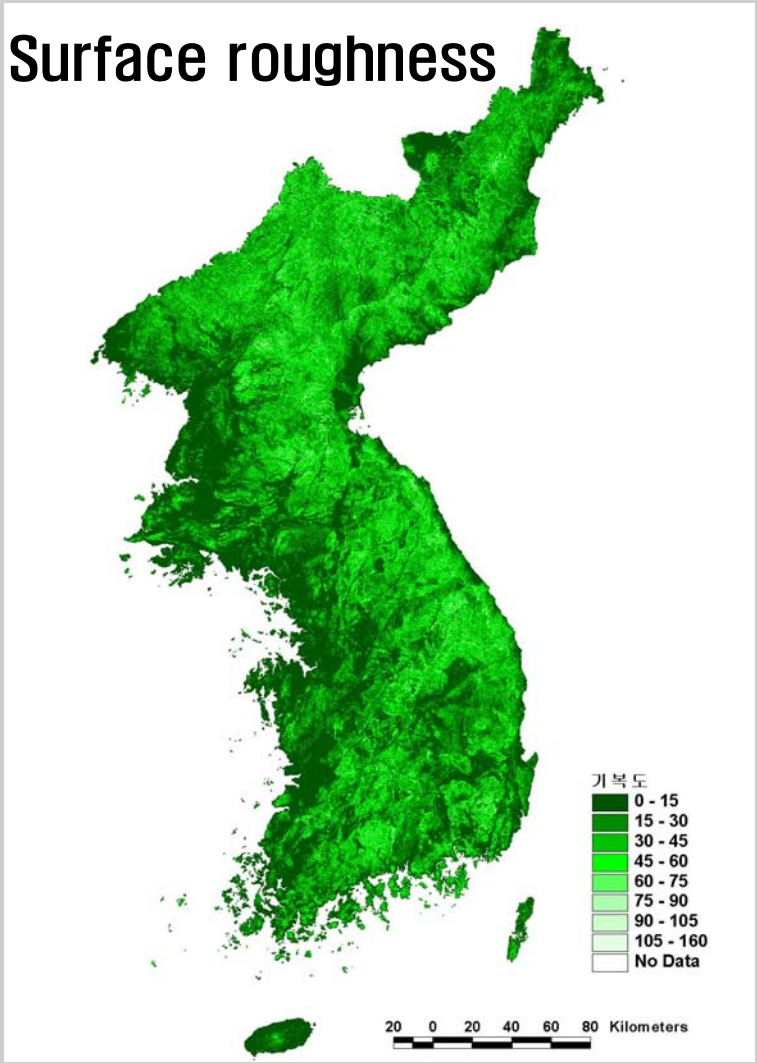
Source: Park(2007)

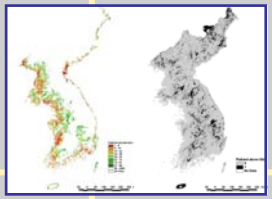


Mountains vs Plains

Plains = Low slope angle + Low relief

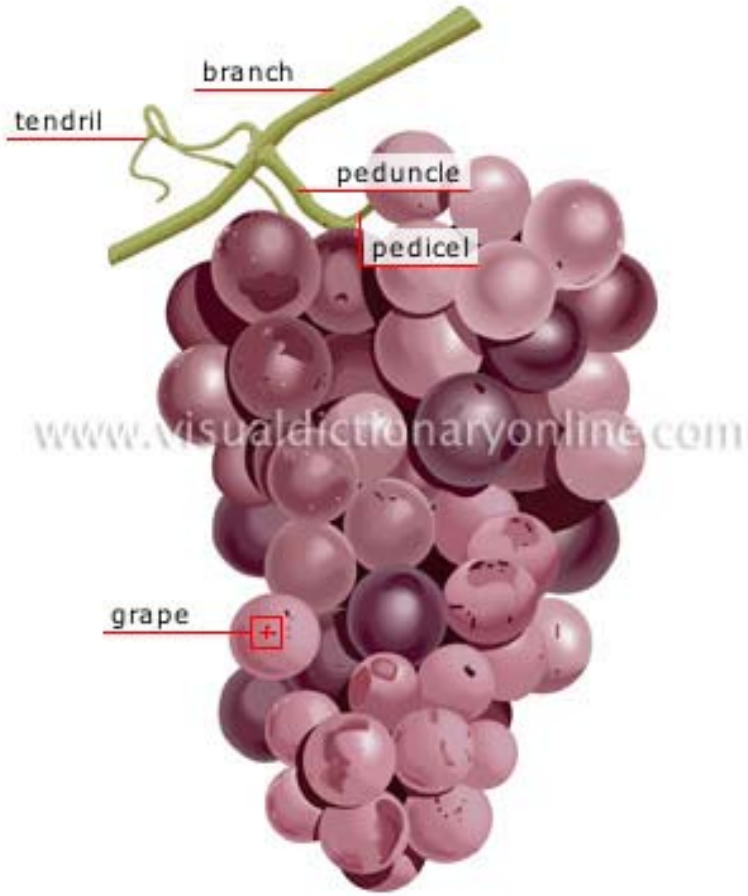


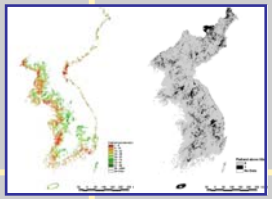




The characteristics of Korean Landforms

"Korea looks like of a bunch of grapes, plains are connected by rivers as individual grapes are connected by peduncles" (Prof. Kim Sang-Ho (deceased) after from Herman Lautensach



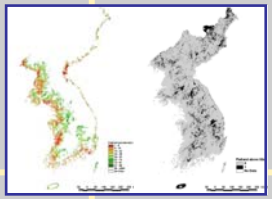


The distribution of Plains in Korea

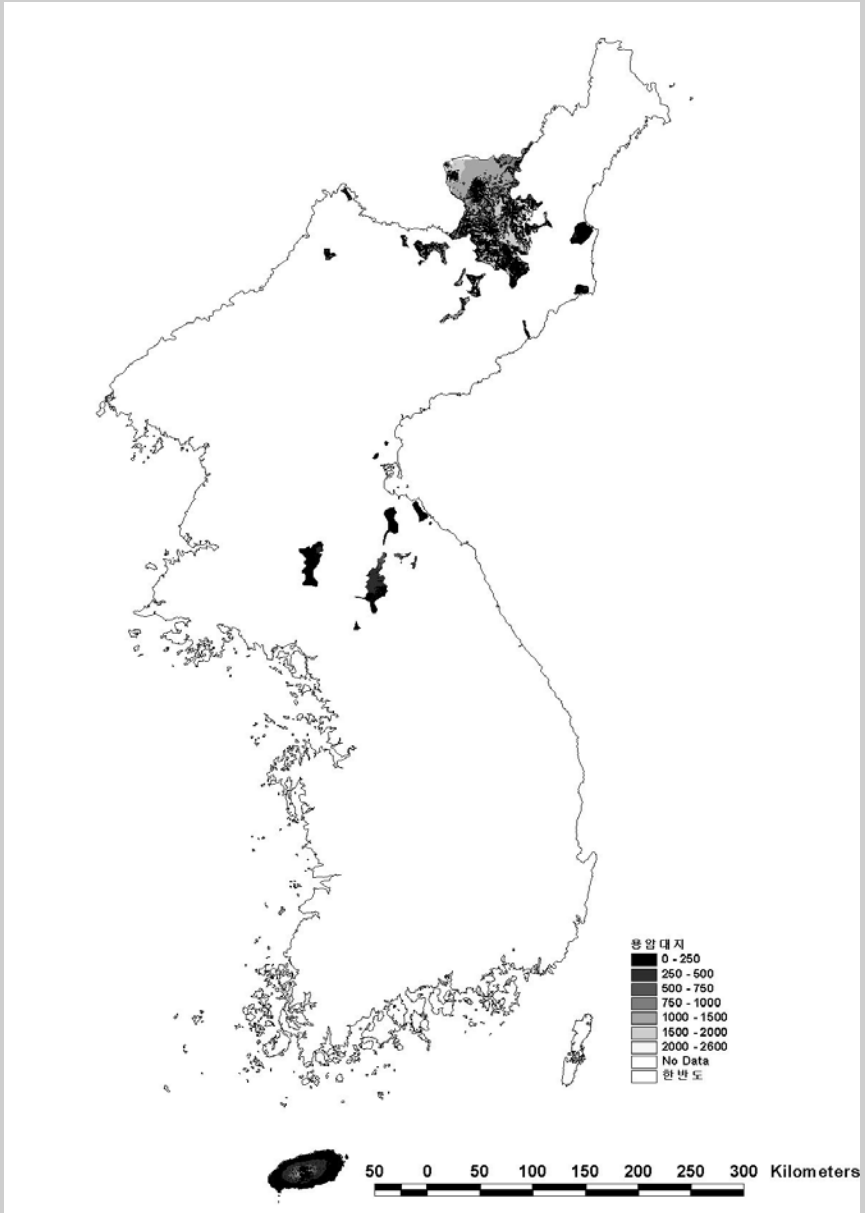
The proportion of plains: 36.3%

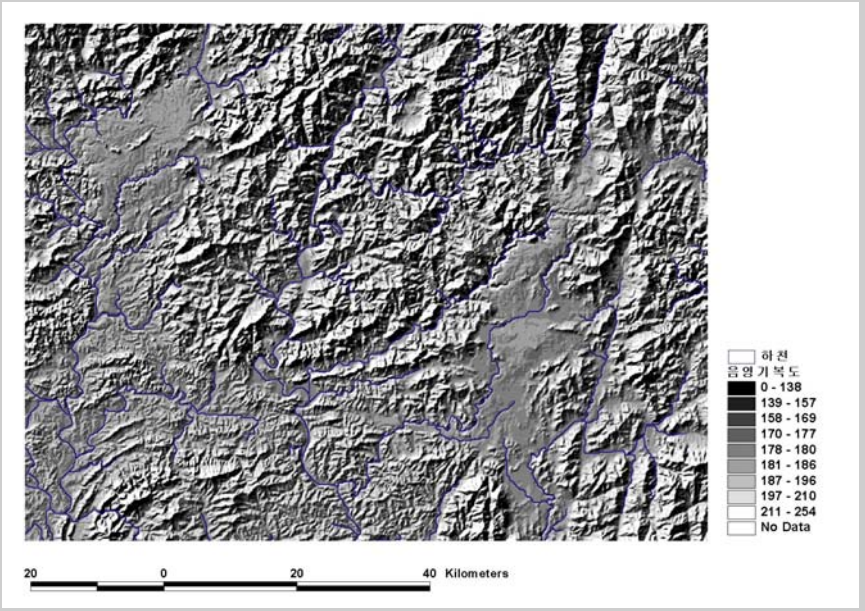
Types of Plains (Park, 2009)

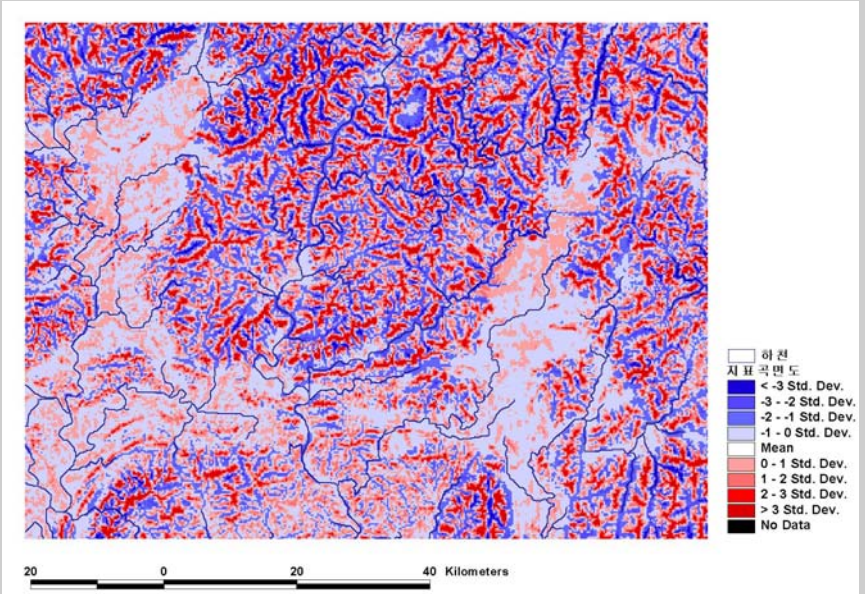
1) Lava Plains;
2) Fluvial Plains;
3) Fluvio-marine Plains;
4) Erosional Plains;
5) Intermontaine Basins;
6) Upland Plateau

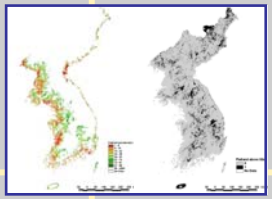


Type of Plains (Lava Plains)

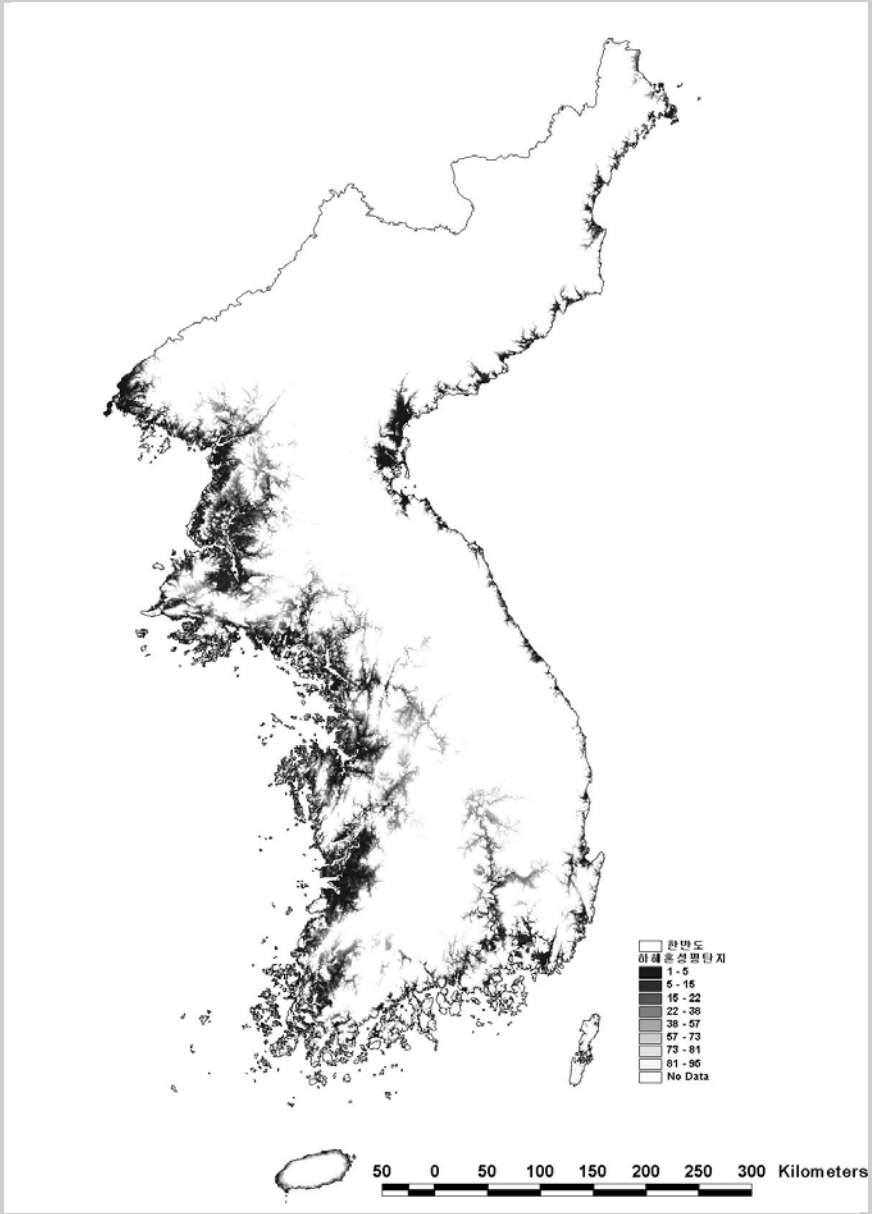


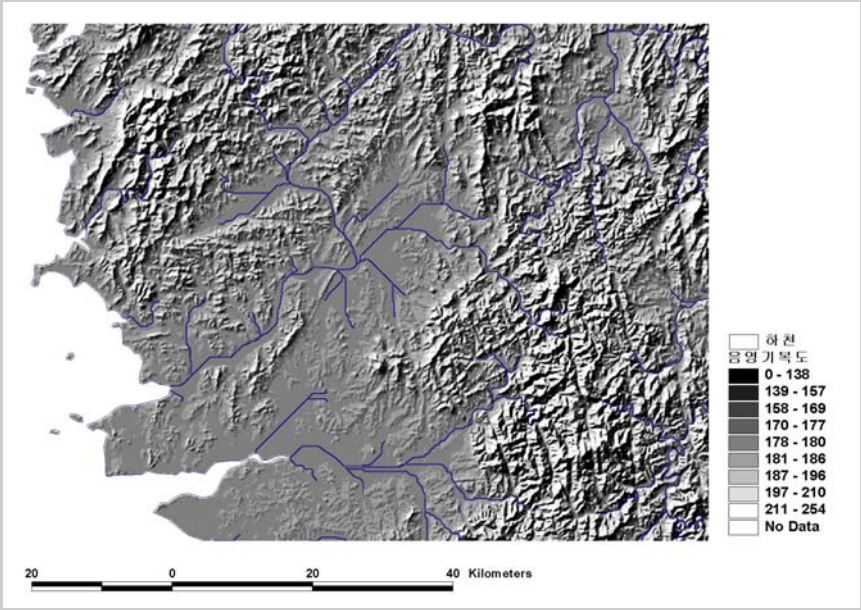


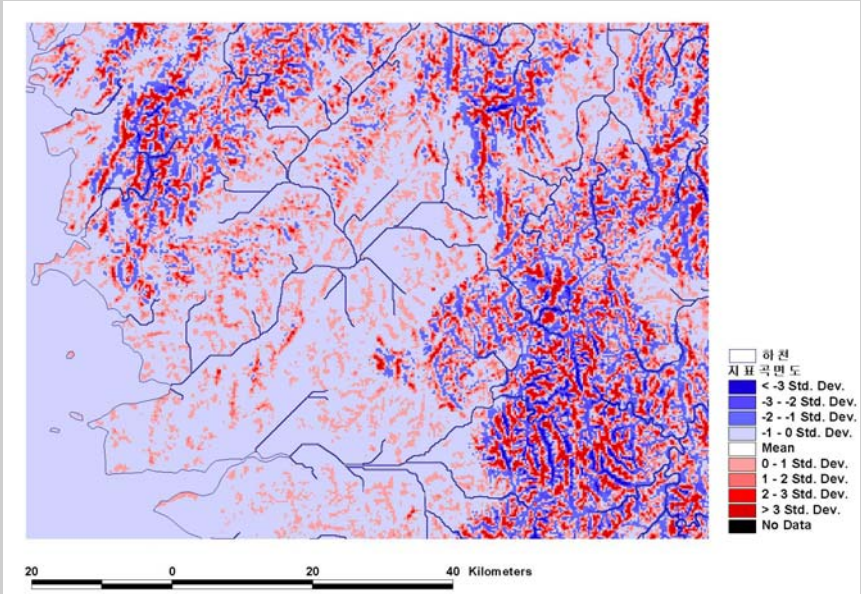


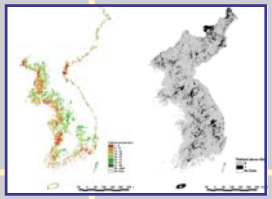


Type of Plains (Fluvio-marine plains)

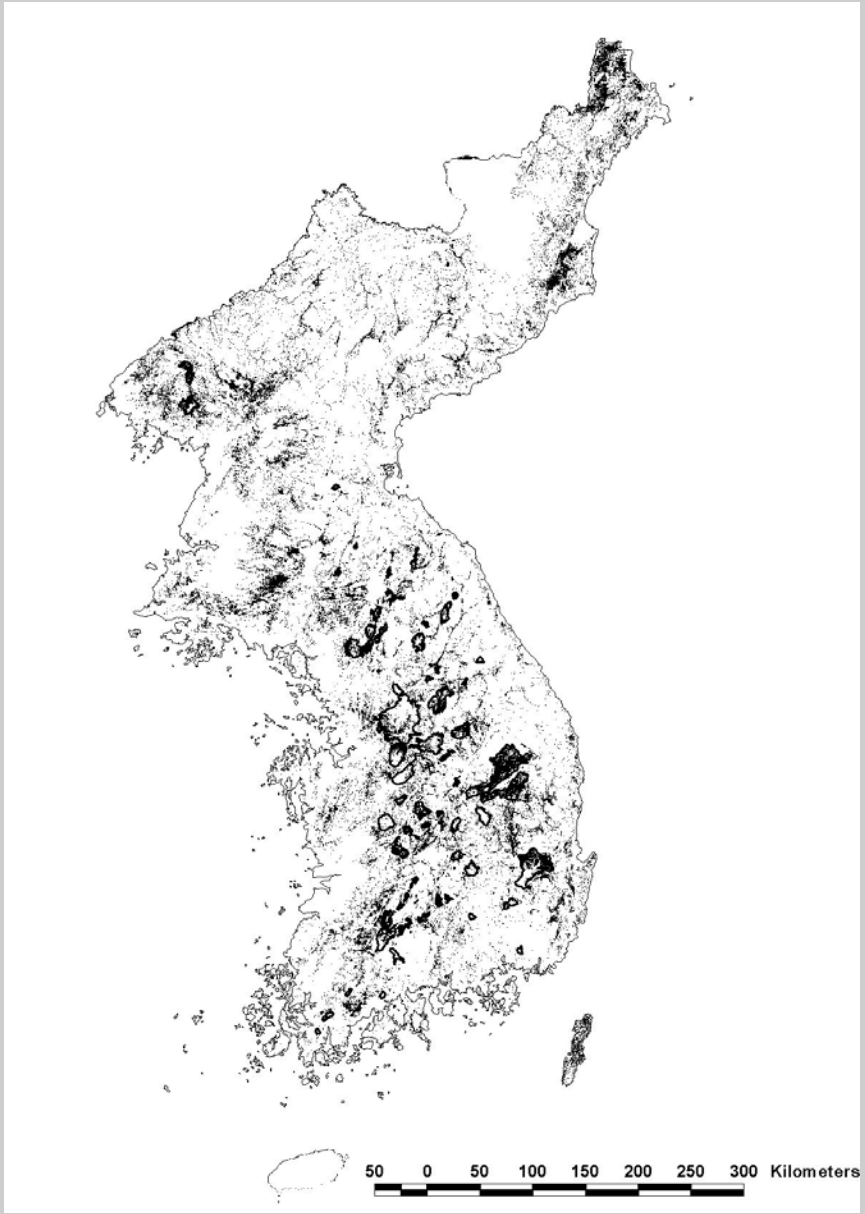


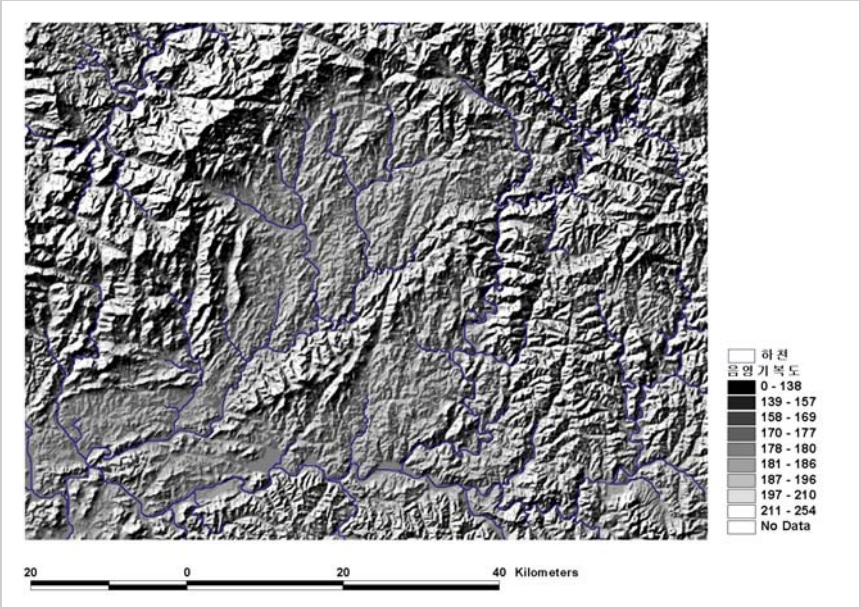


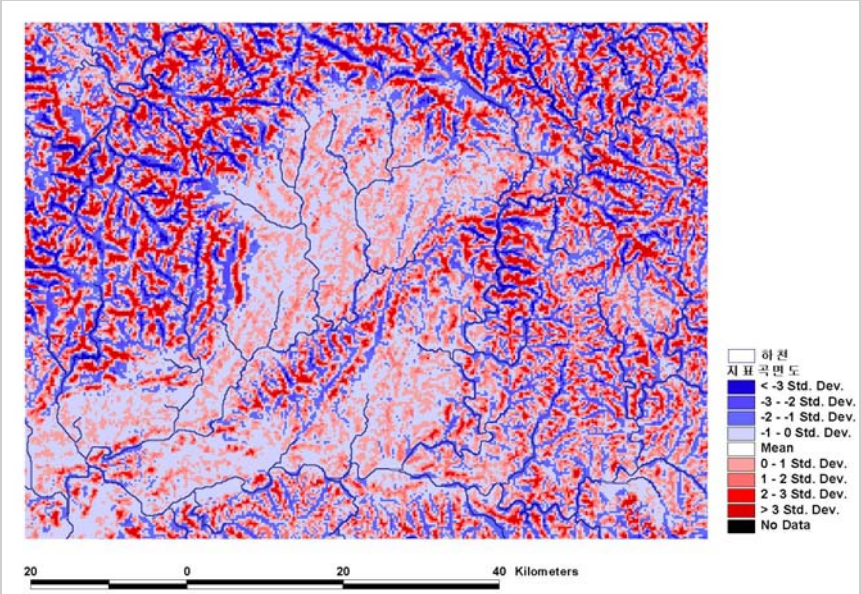


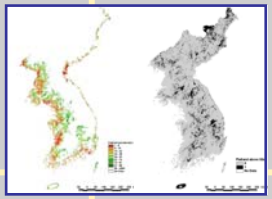


Type of Plains (Erosional Plains)

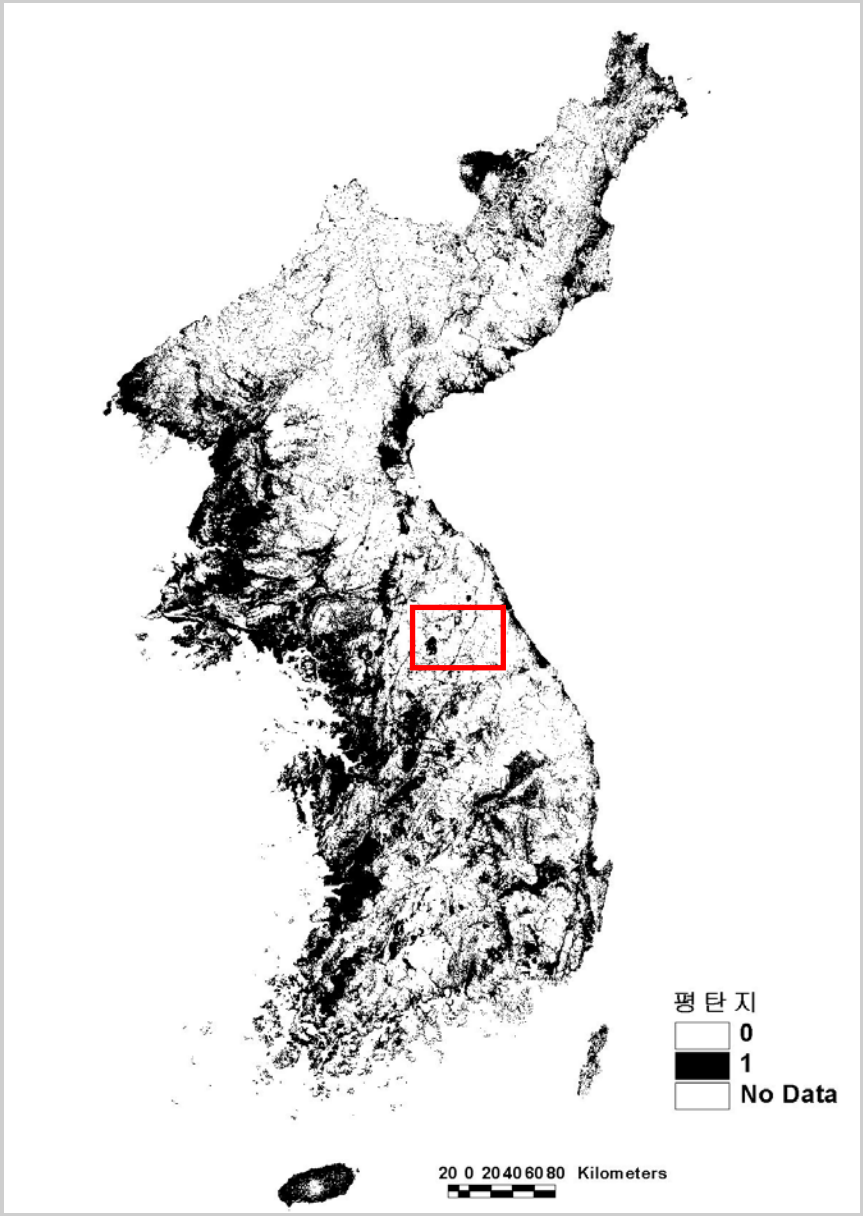


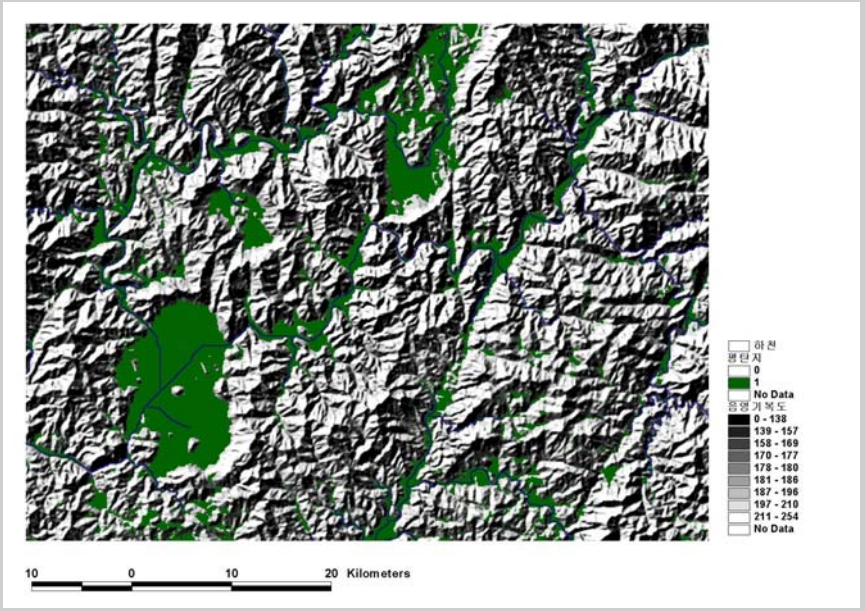


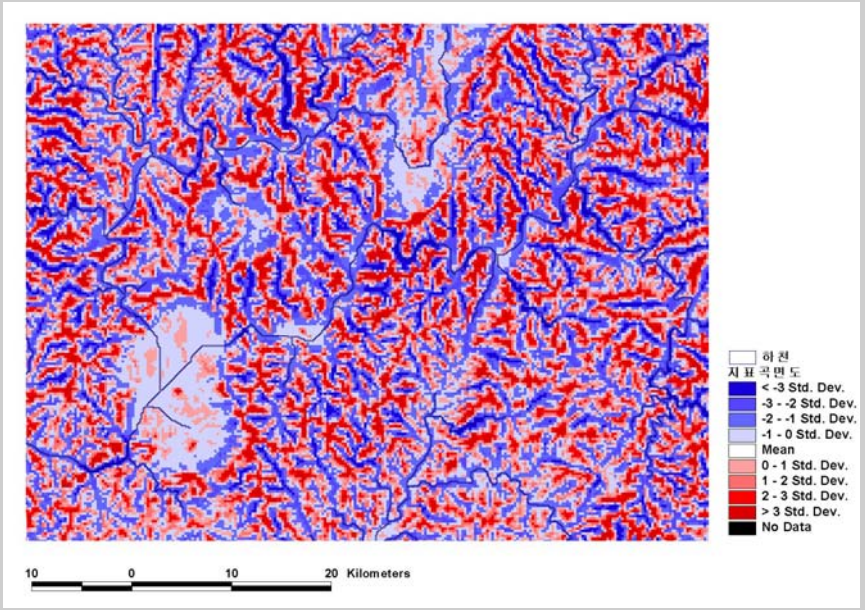


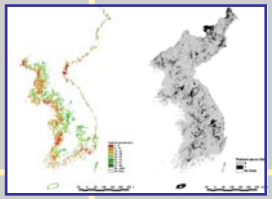


Type of Plains (Intermontaine Basin)

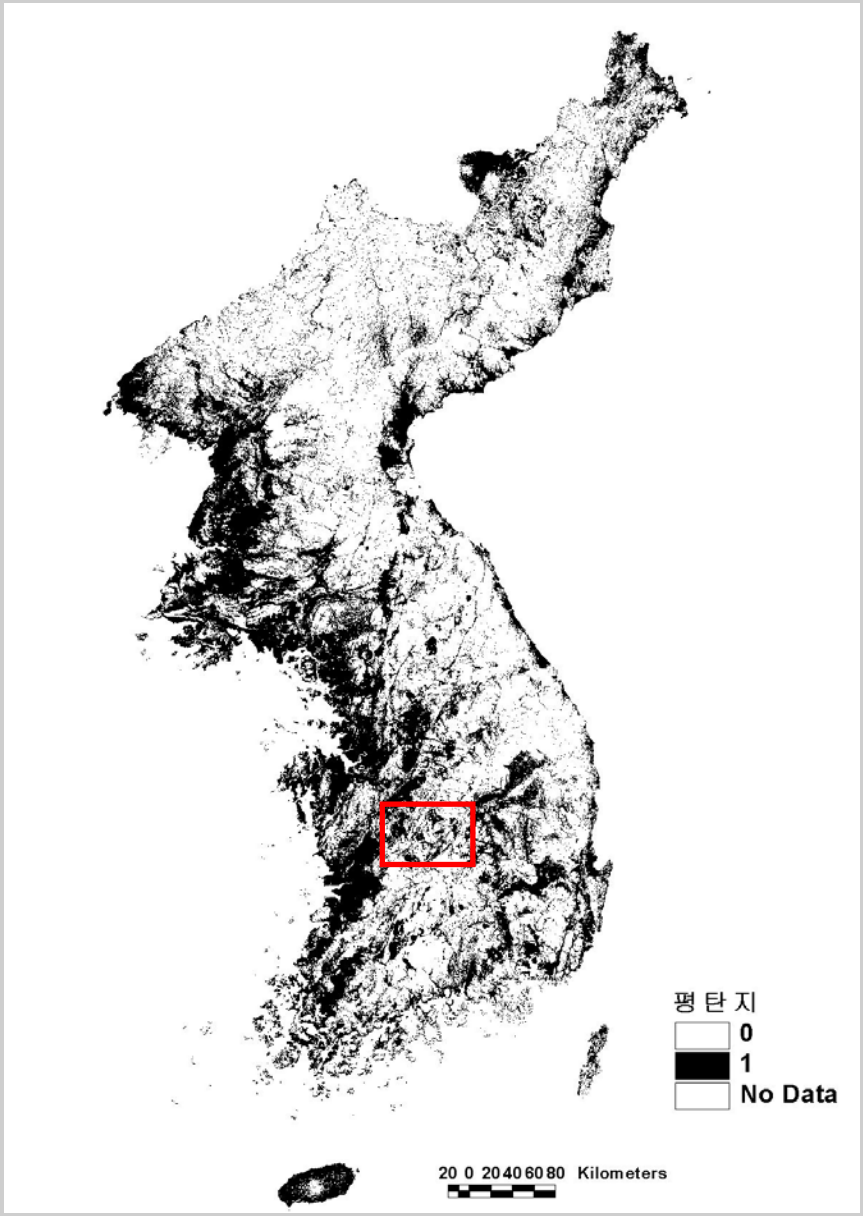


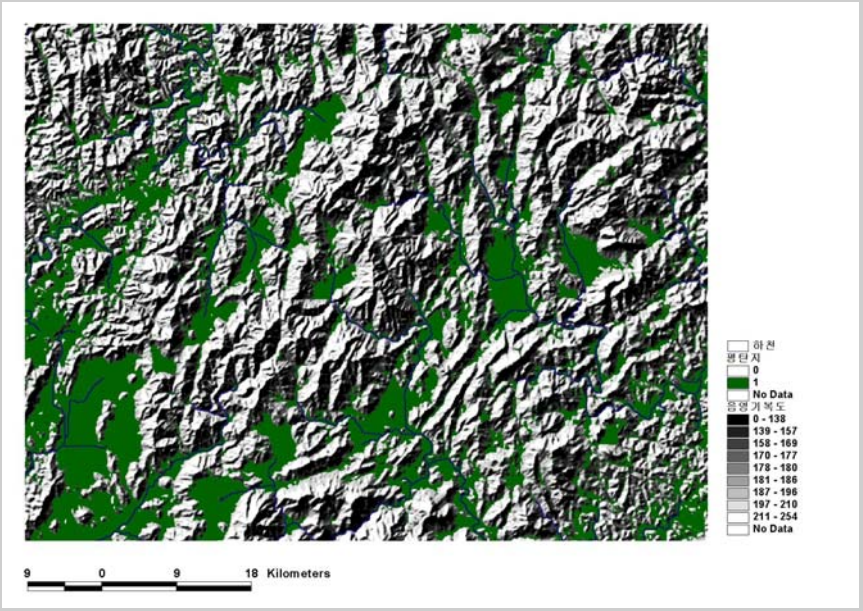


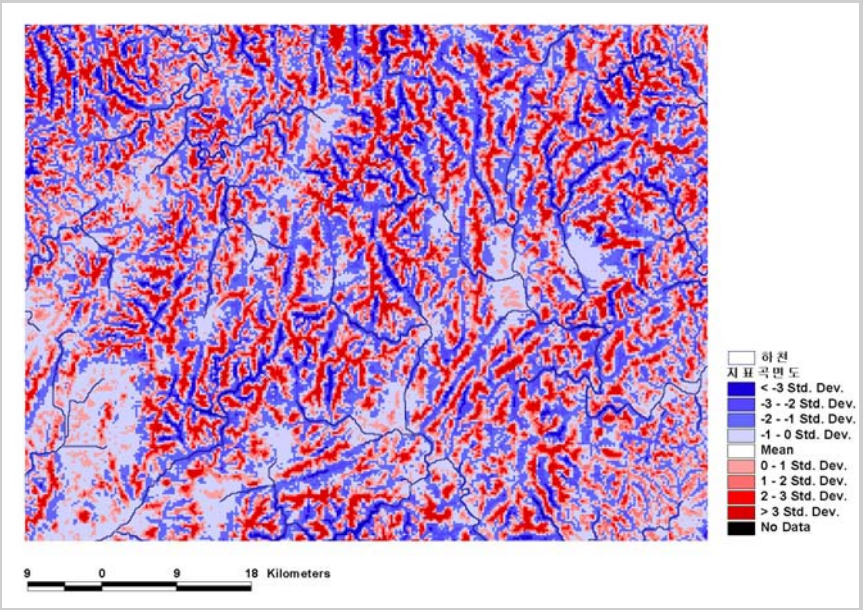


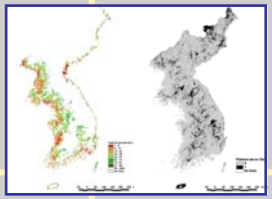


Type of Plains (Intermontaine Basin)

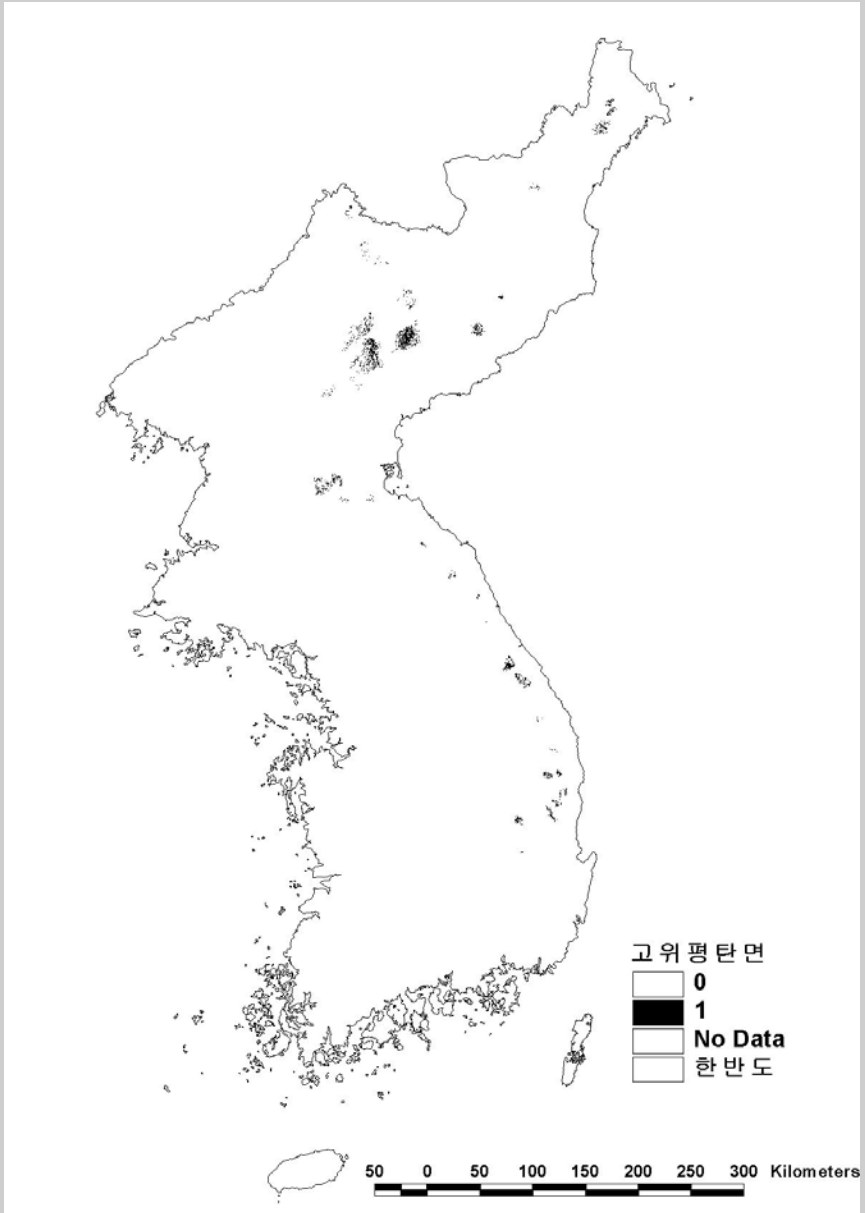


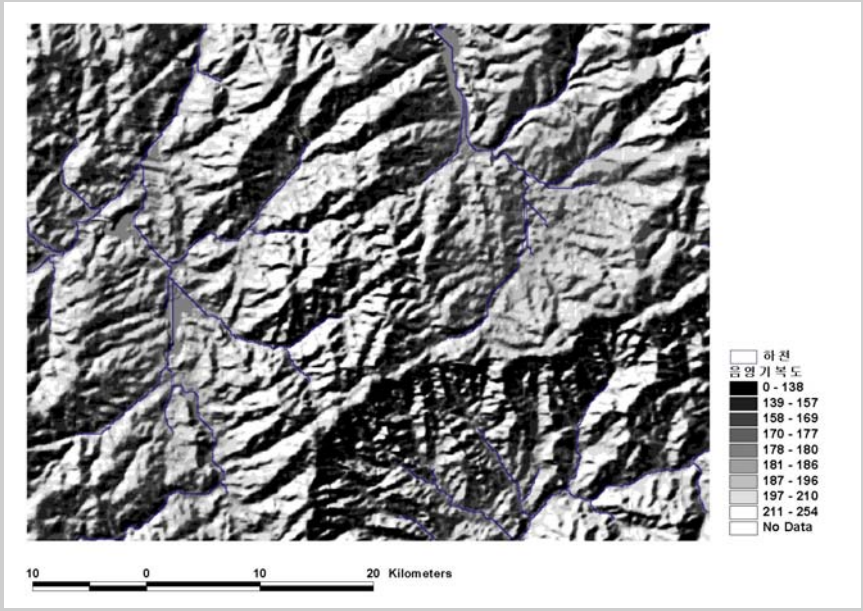


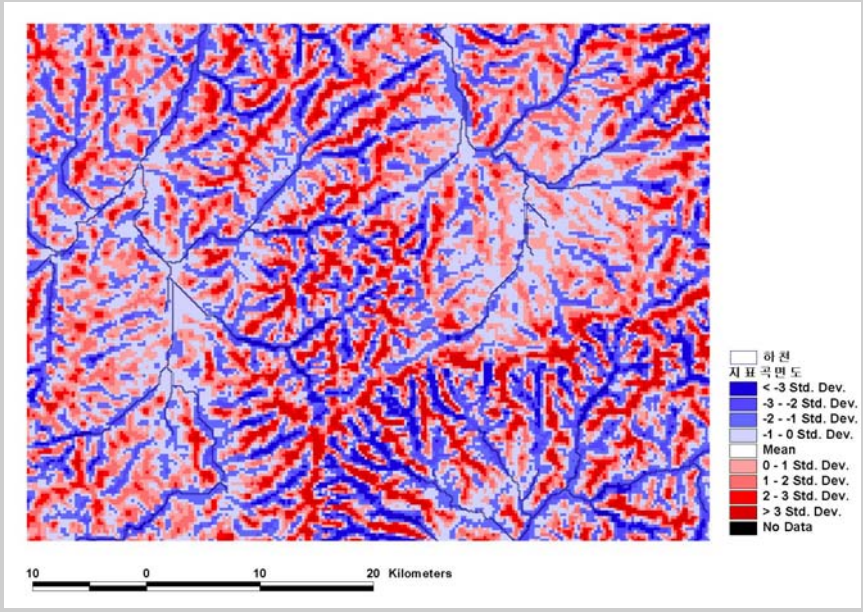


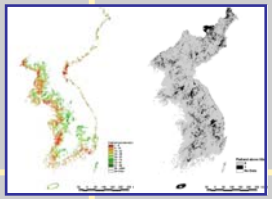


Type of Plains (highland Plateau)

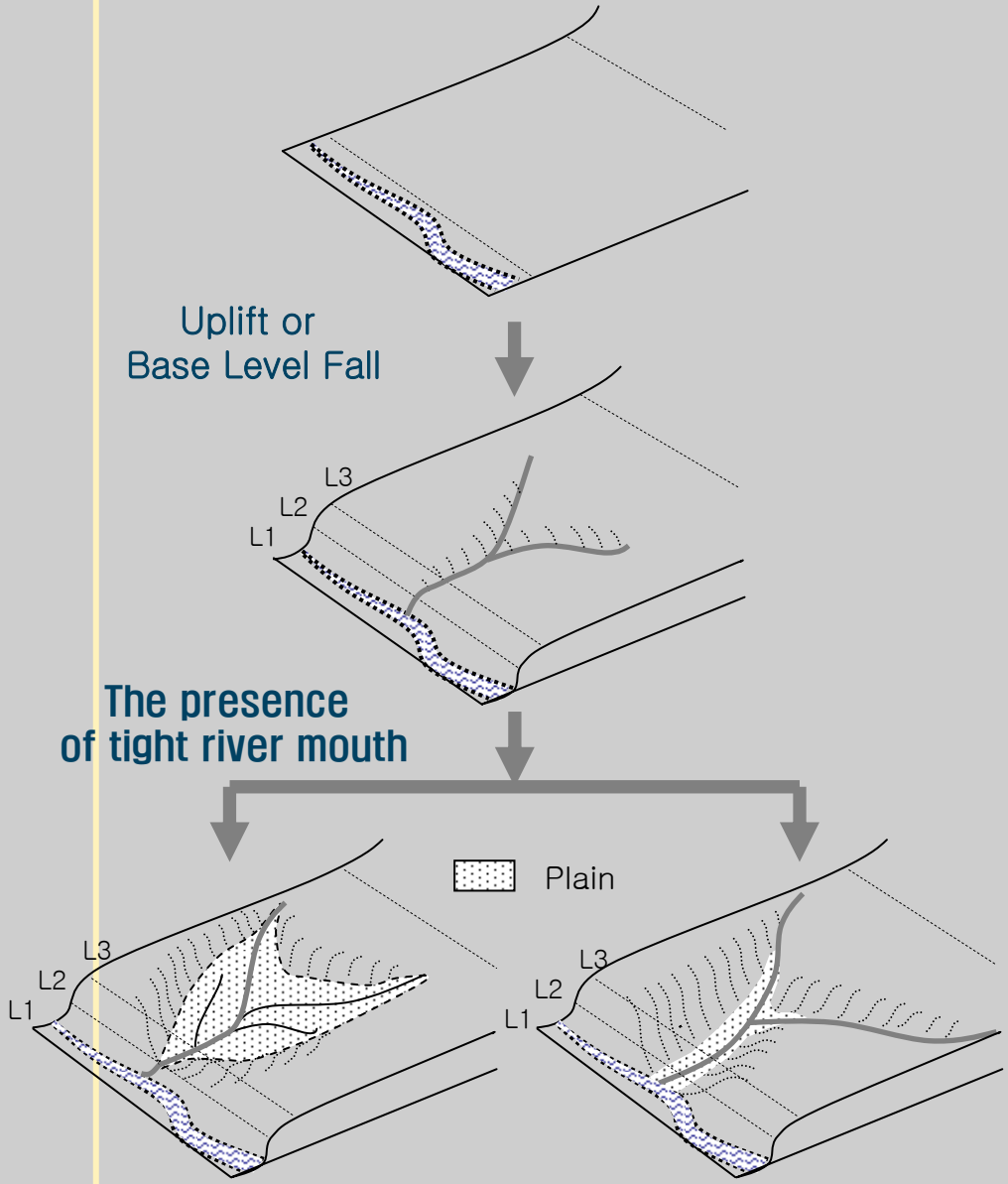


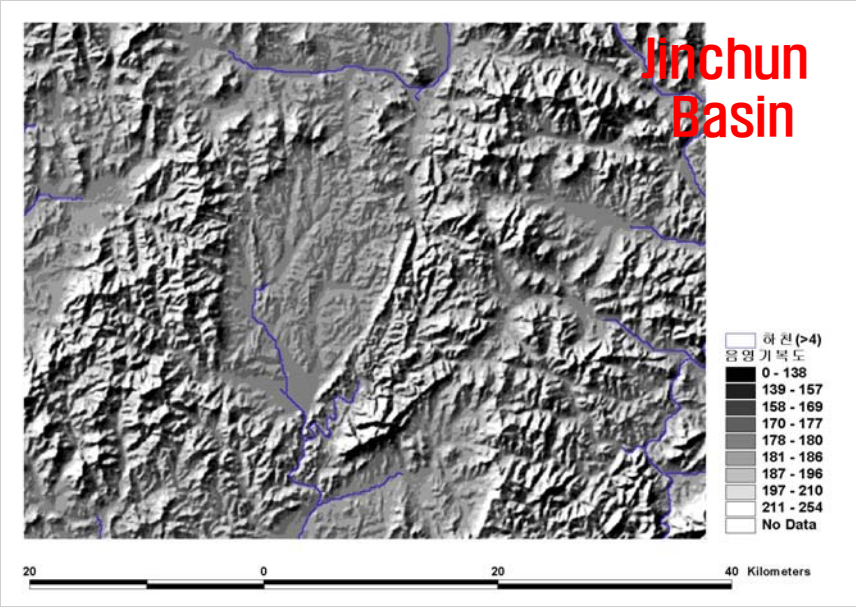


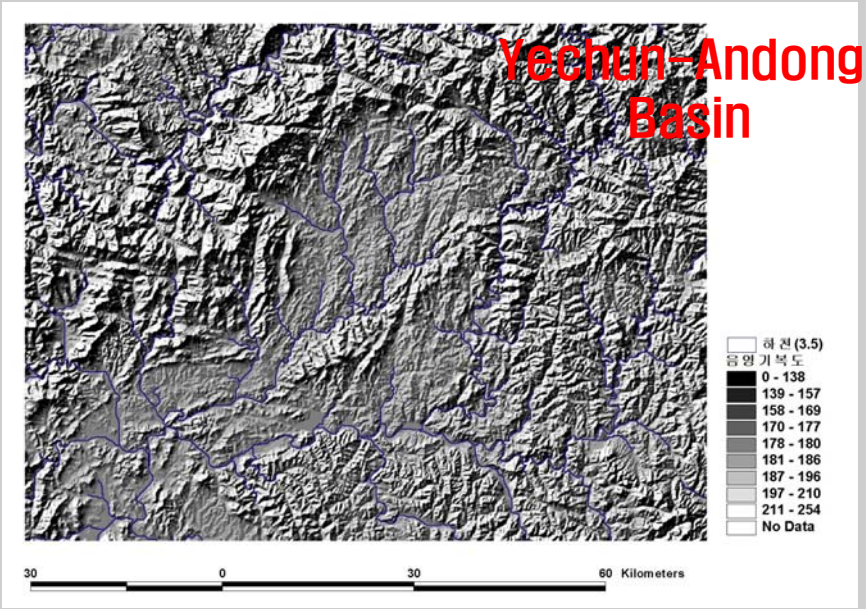


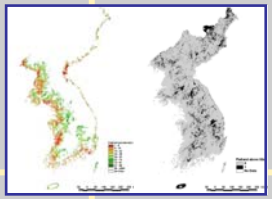


The Forming Processes of Erosional Plains

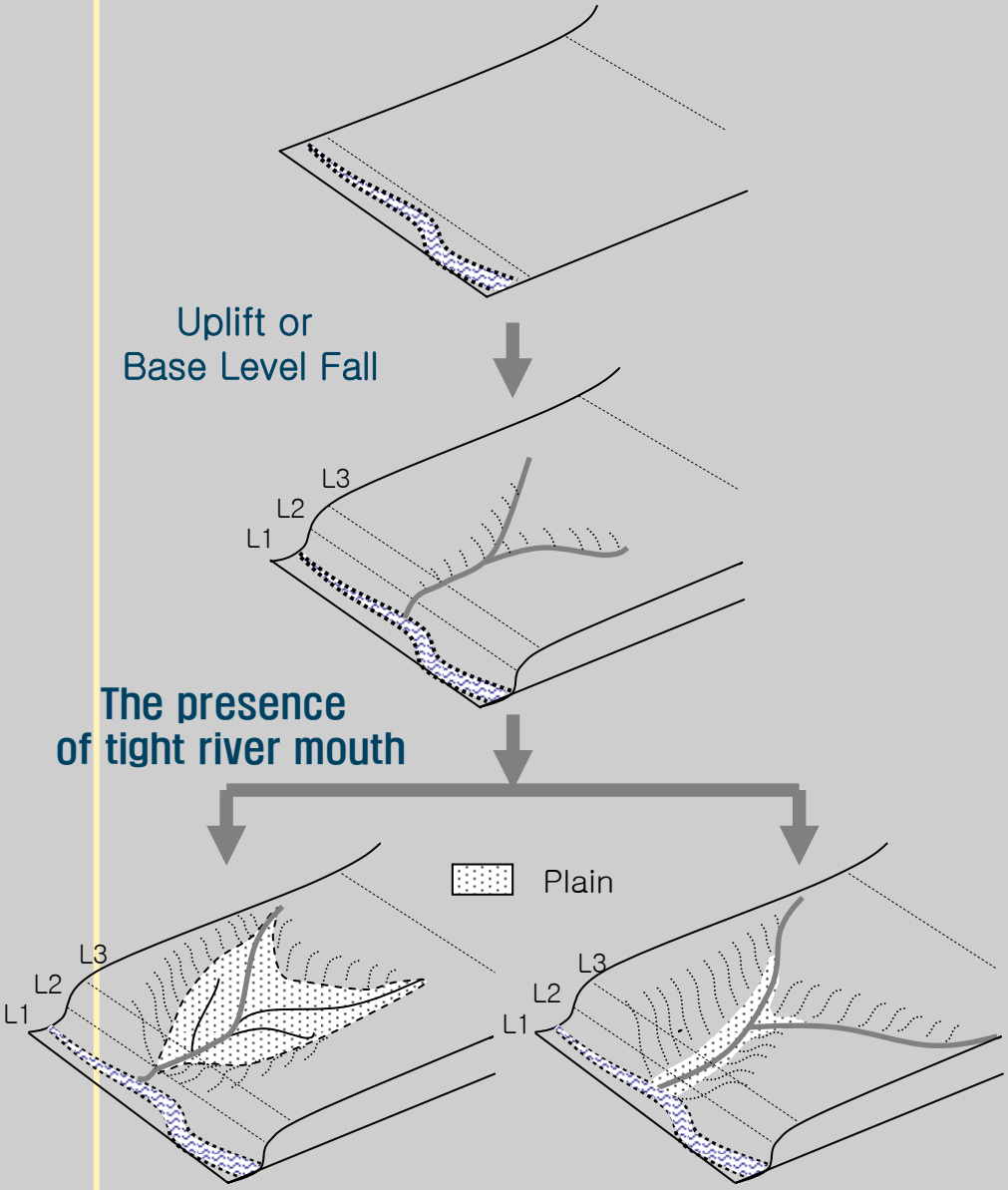


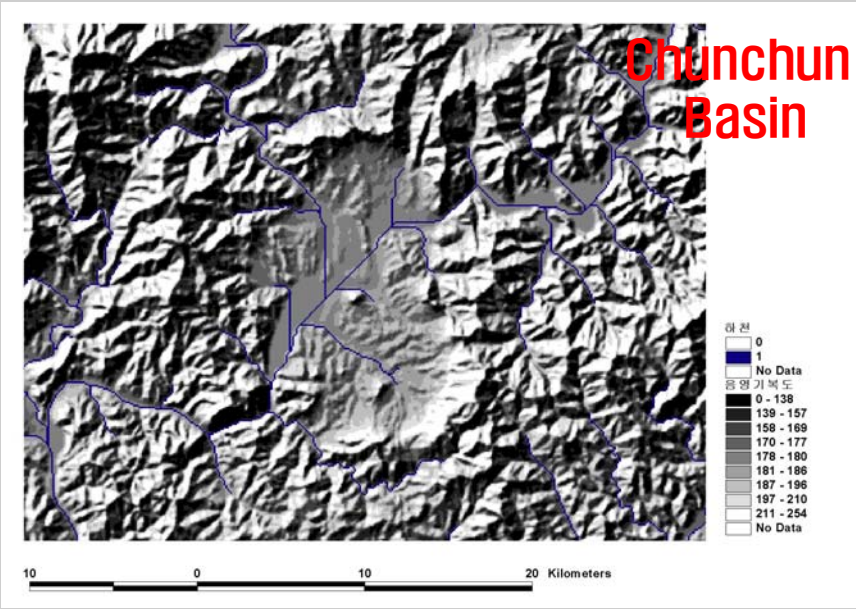


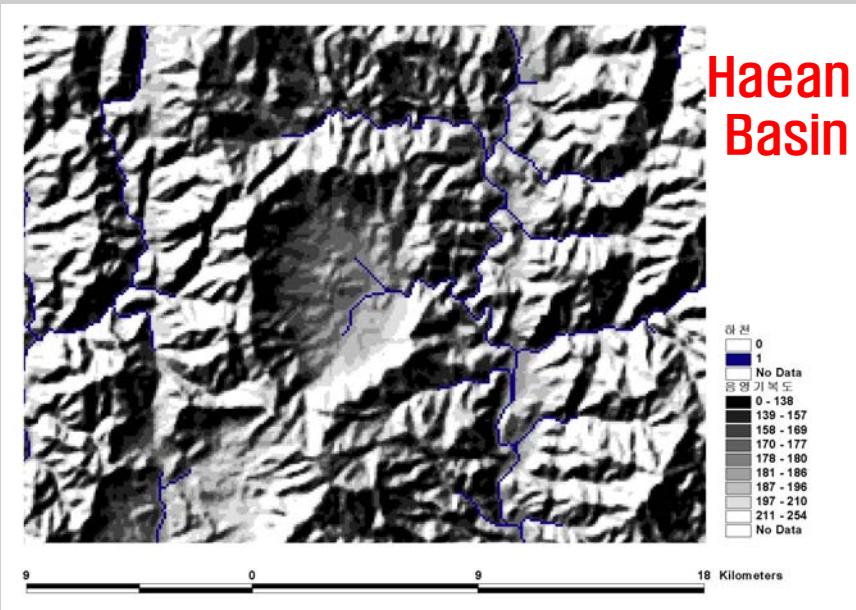


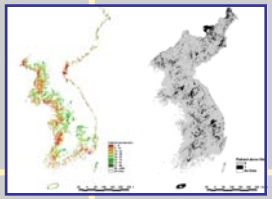


The Forming Processes of Erosional Plains

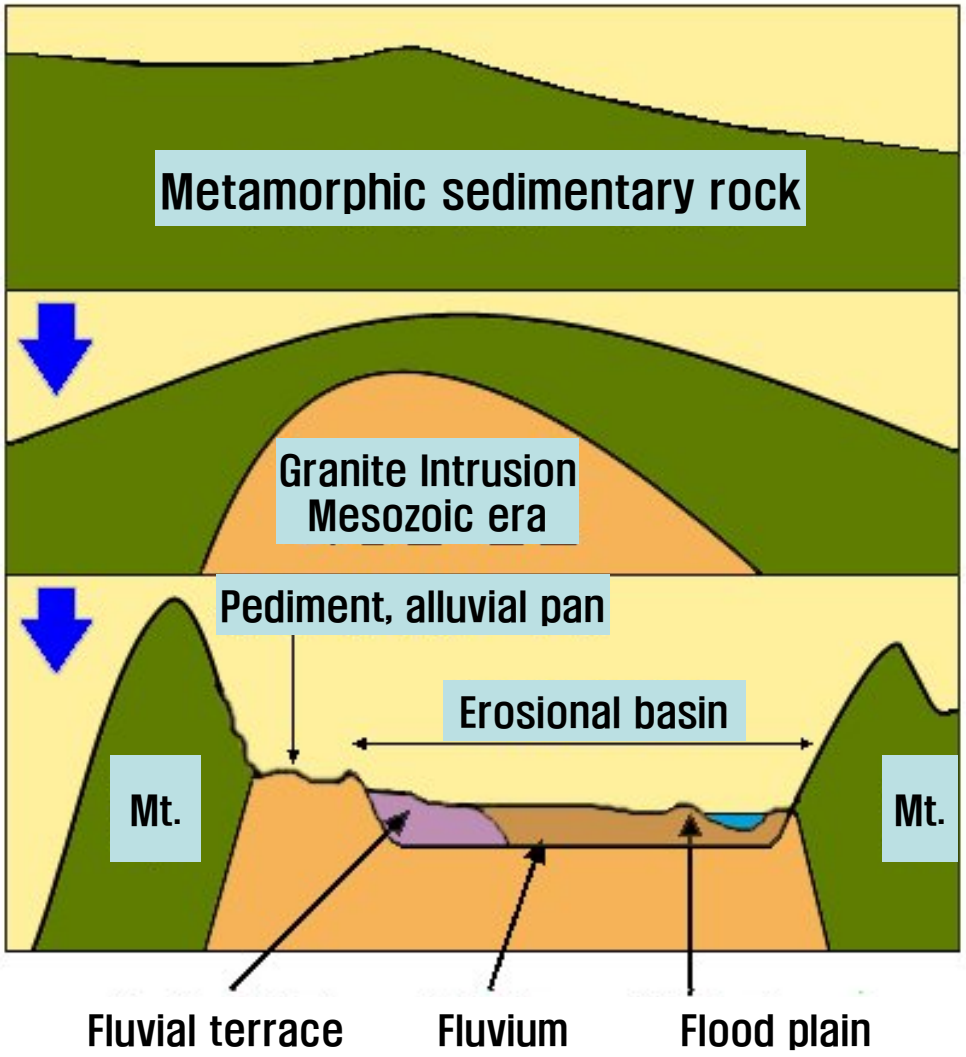


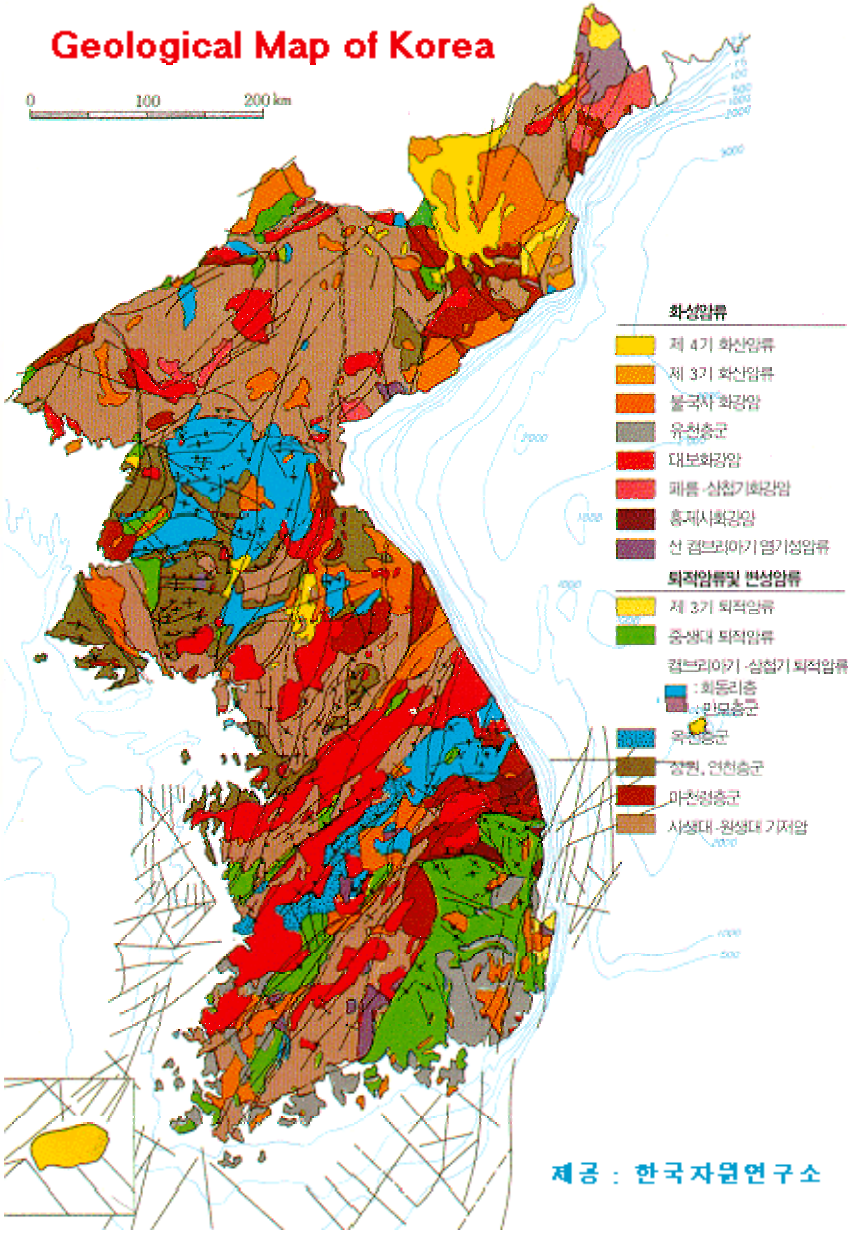


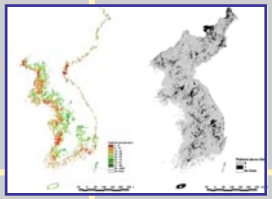




The Forming Processes of Erosional Plains

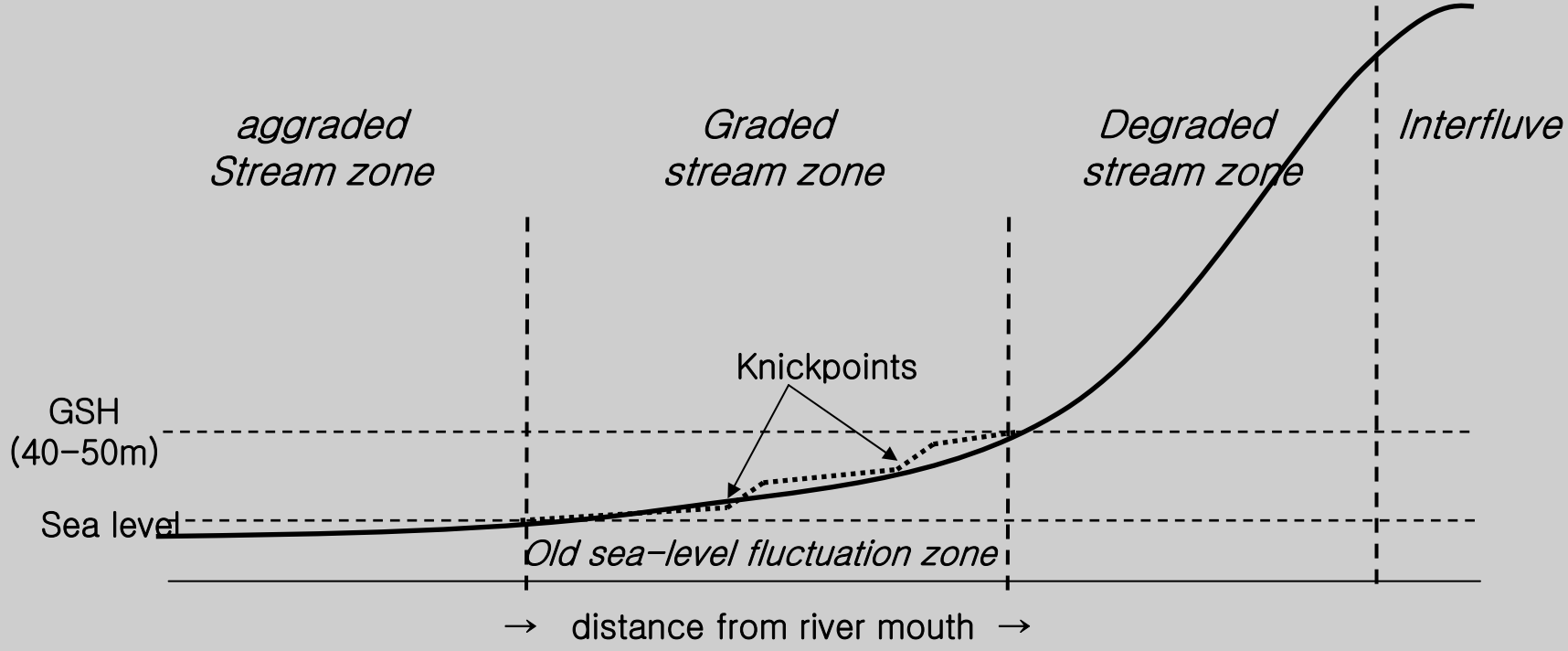


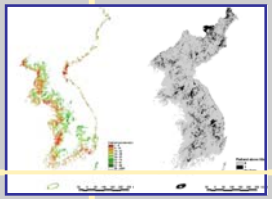




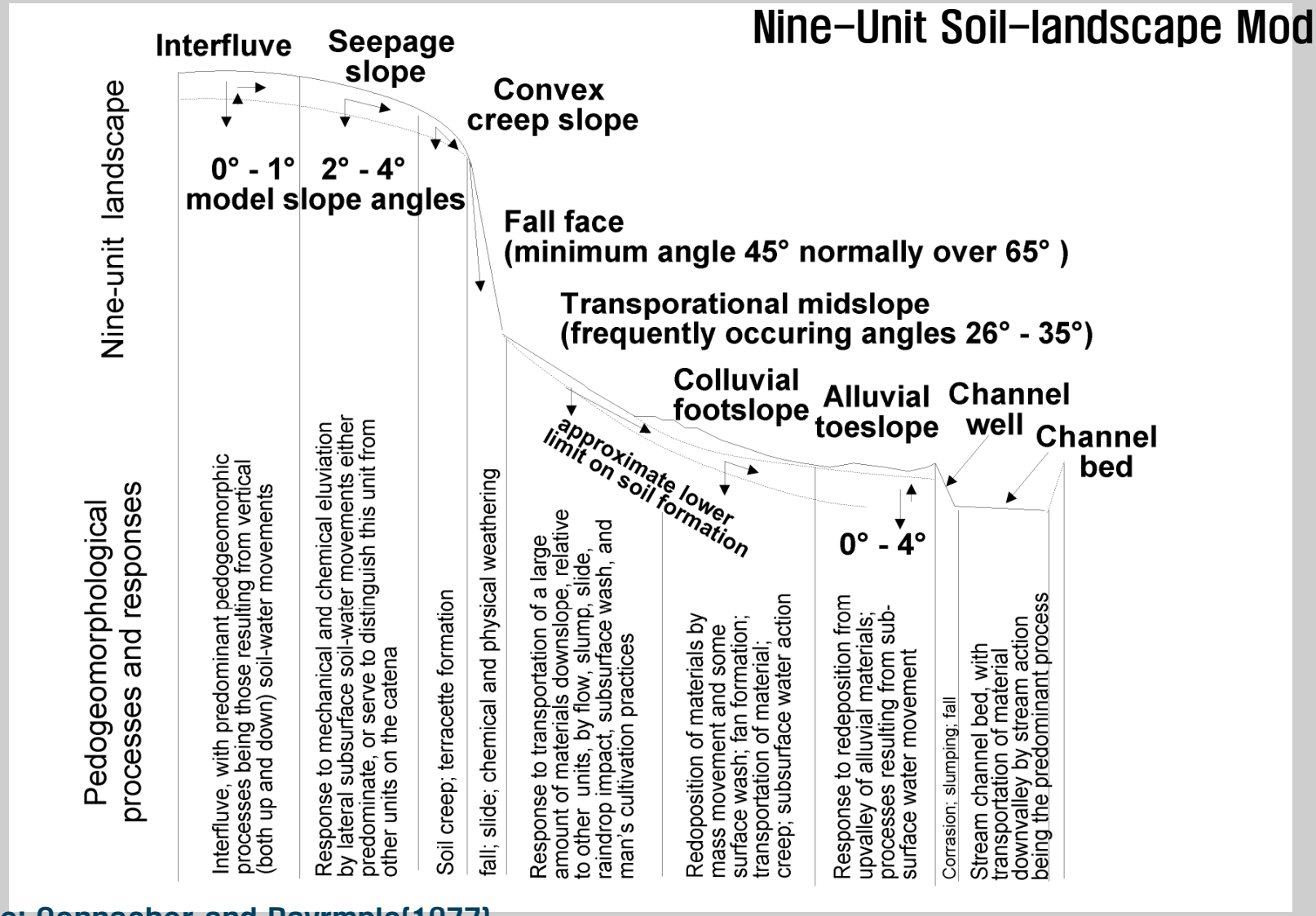
The Forming Processes of Plains

Types of Plains	Fluvio-Marine / Fluvial	→	Erosional	→	Intermontaine	→	Plateau
Denudation	Slow	→	Medium	→	Great	→	Medium
Base level	Sea level	→	Stream bed	→	Stream bed + Hard rocks	→	Hard Rocks → Position
Rock type	Various	→	granite + others	→	Granite	→	Granite → Granite + others
Size	Large, continuous	→	Medium, scattered	→	Small, isolated	→	Small
Relief	small	→	medium	→	large	→	medium → small

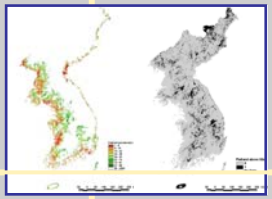




Land Use Potential Mapping: Theory



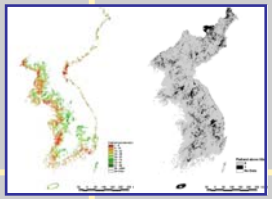
Source: Connacher and Dayrmple(1977)



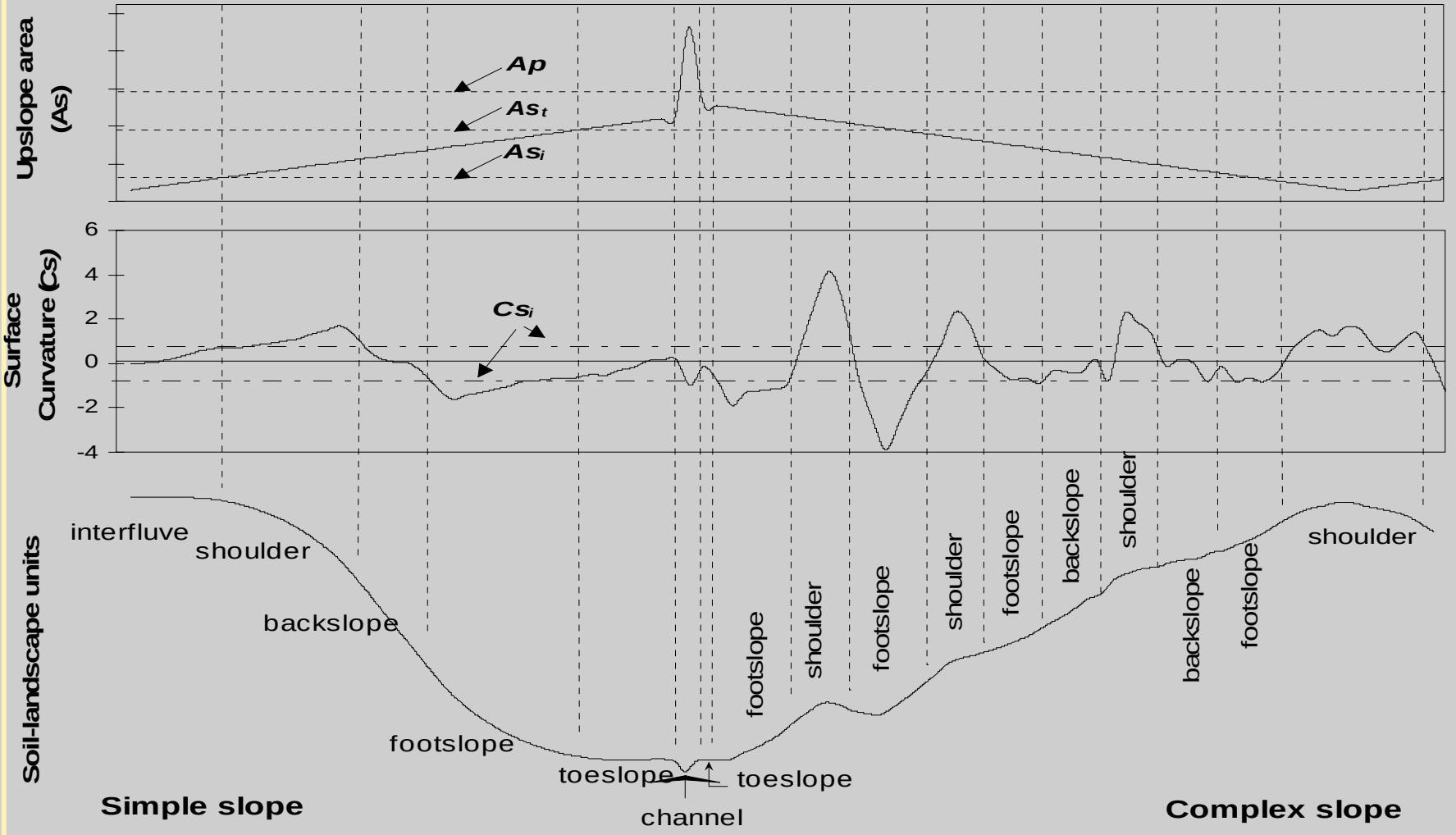
Land Use Potential Mapping: Theory

Land Use Potential Matrix

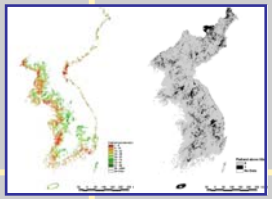
Soil-Landscape Unit	summit	shoulder	backslope	footslope	toeslope	channel
Accessbility	1	1	2	5	4	1
Workability	1	1	2	4	5	1
Soil fertility	1	1	2	5	5	1
Soil Moisture	1	1	2	3	4	5
Water use	1	1	2	3	4	5
Erosion satety	1	2	3	4	5	1
Foodling safety	5	5	5	4	2	1
Slope safety	1	2	2	4	5	1
Land Use Potential	1.57	1.86	2.57	3.86	4.29	2.14



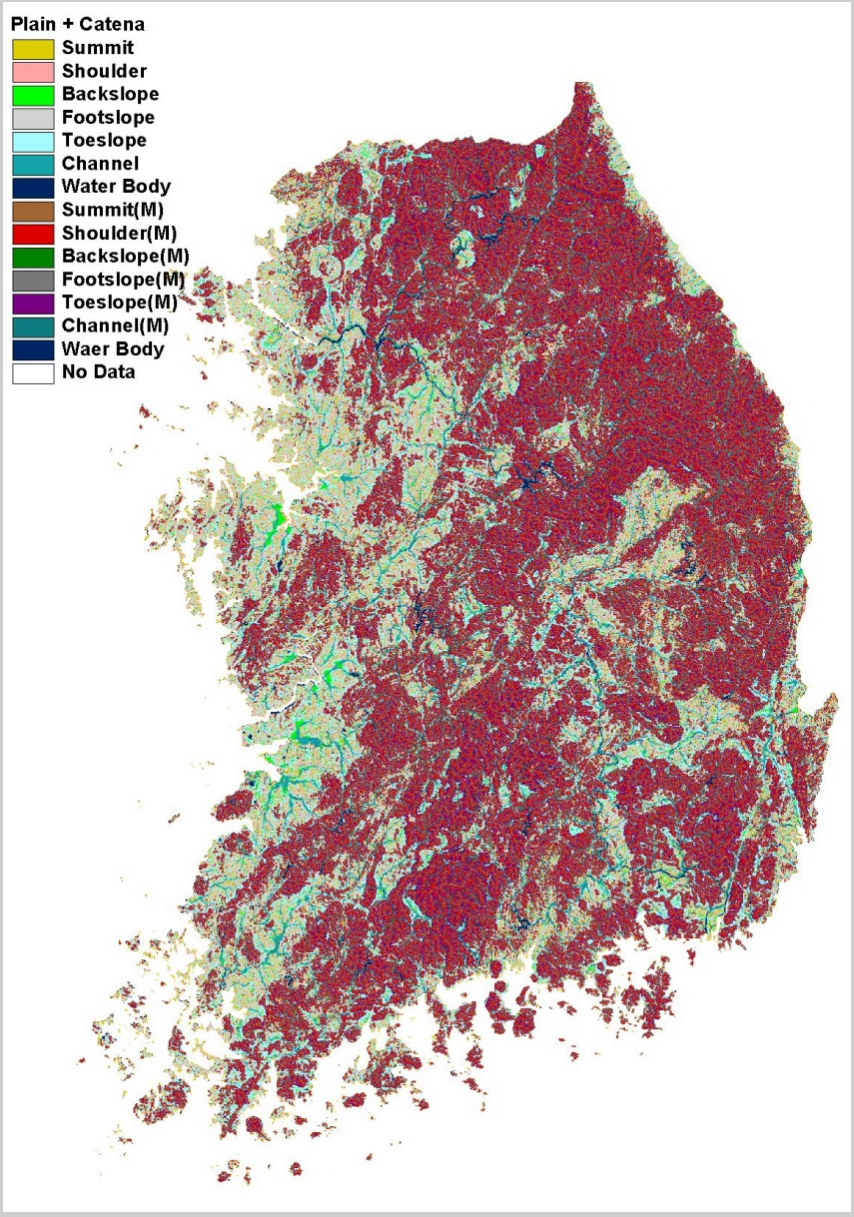
Land Use Potential Mapping: Implementation

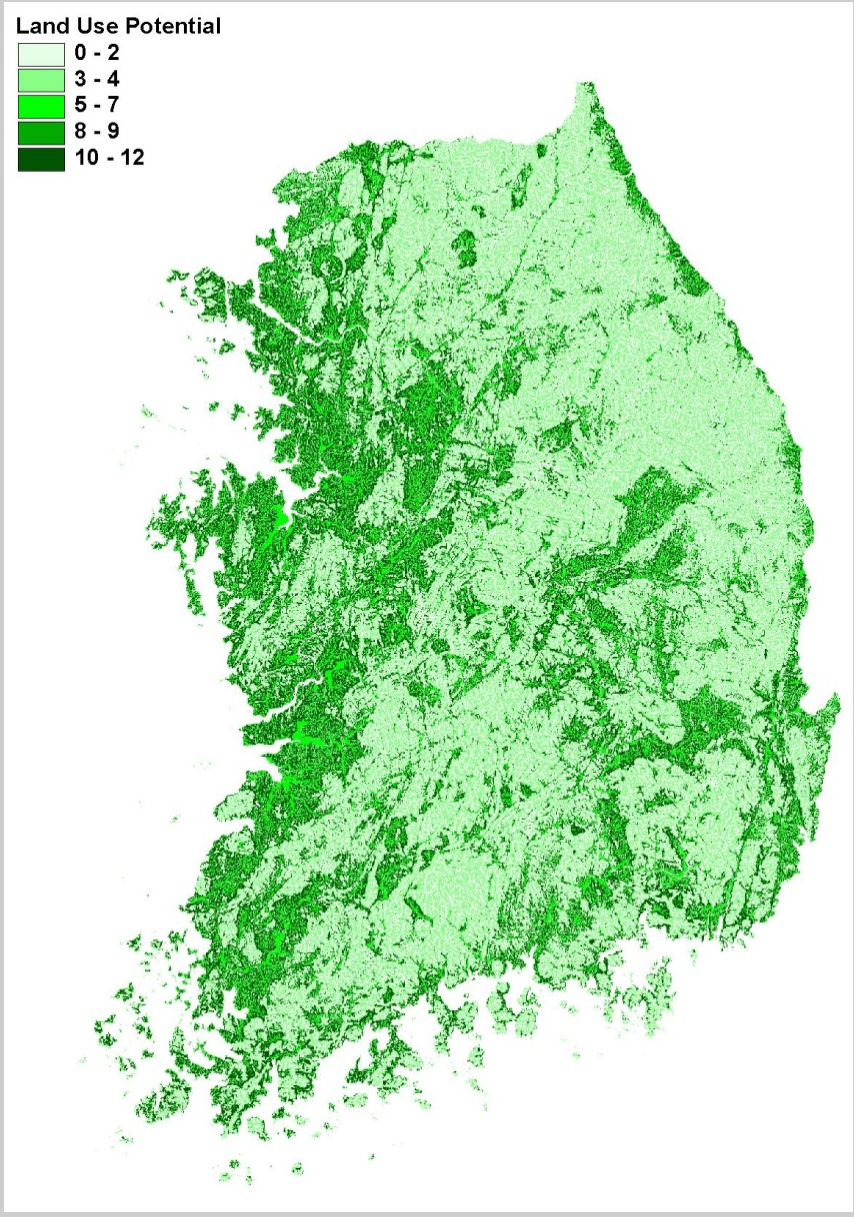


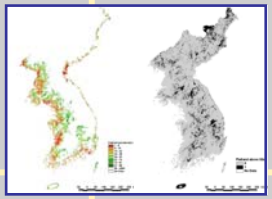
From Park et al. 2001



Land Use Potential Mapping: Implementation

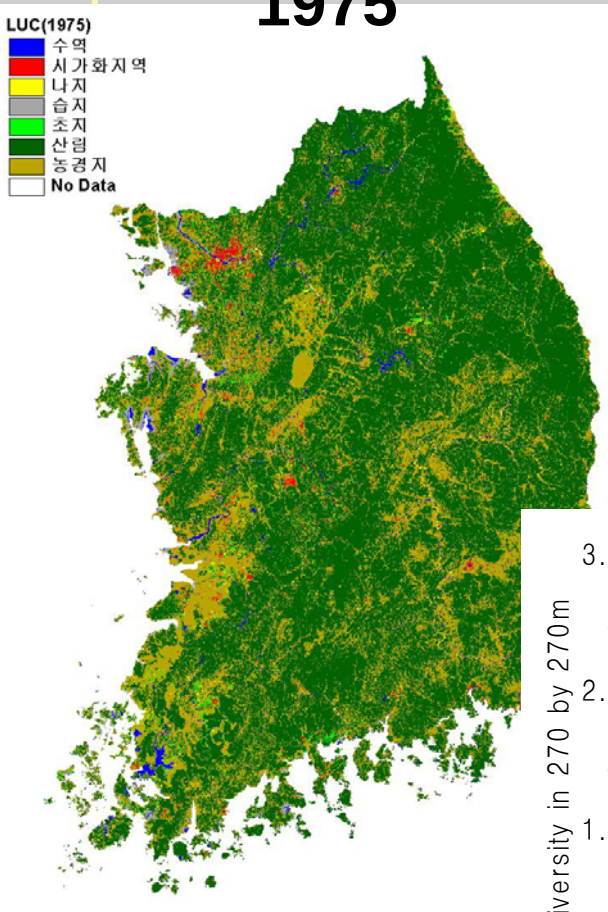




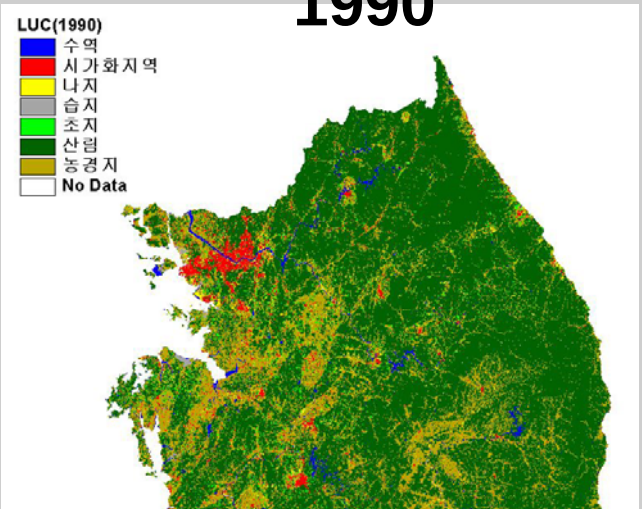


Land Use Changes from 1970s

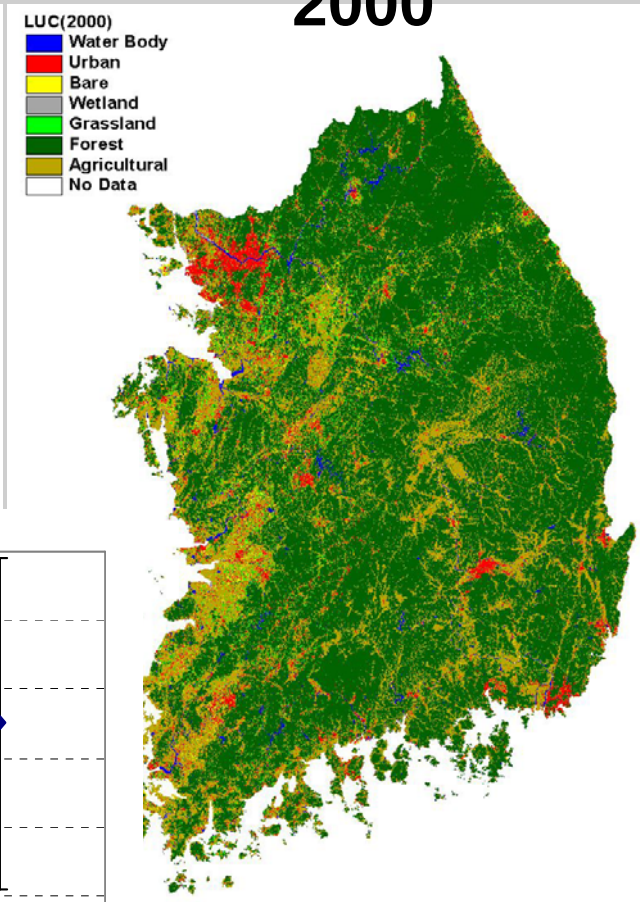
1975

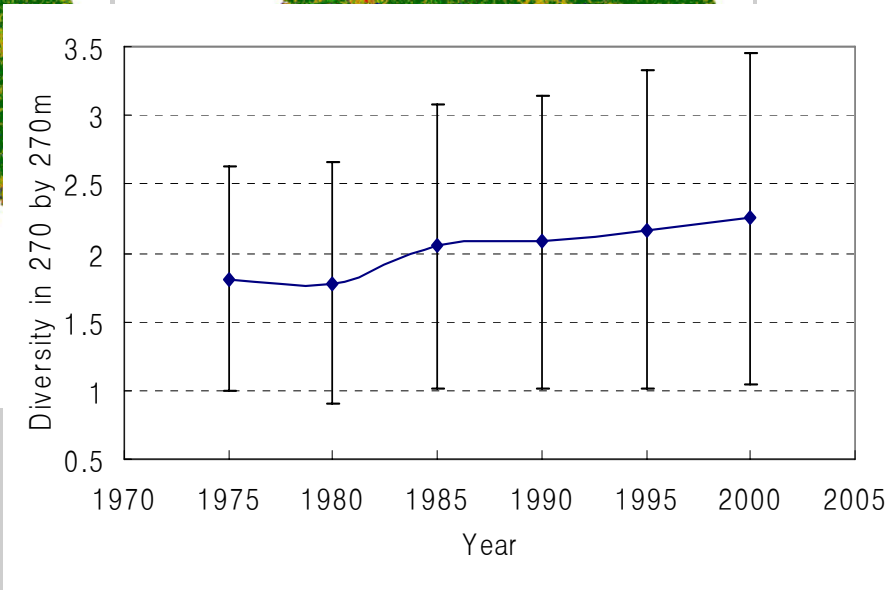


1990

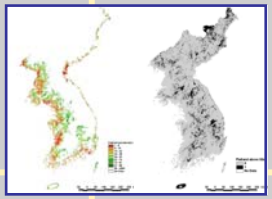


2000

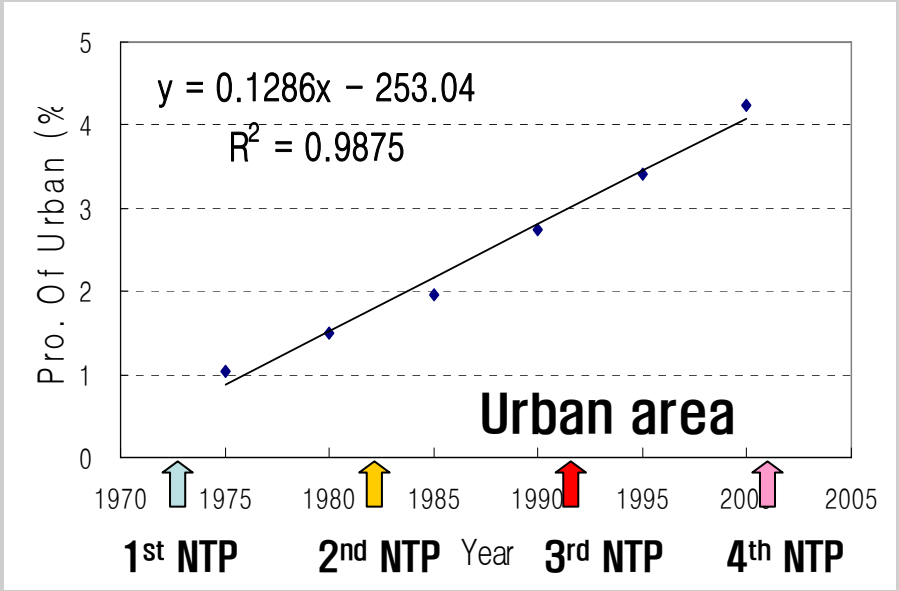


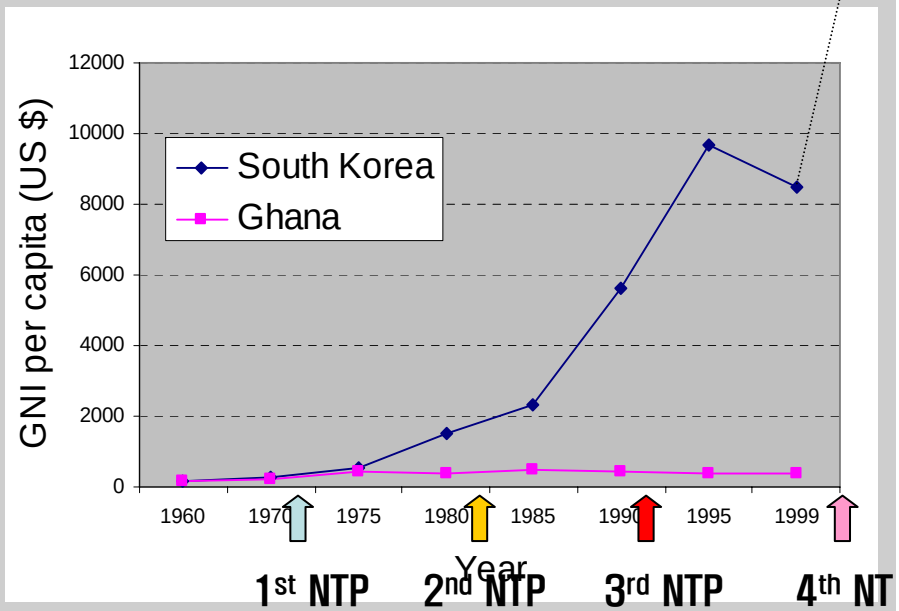


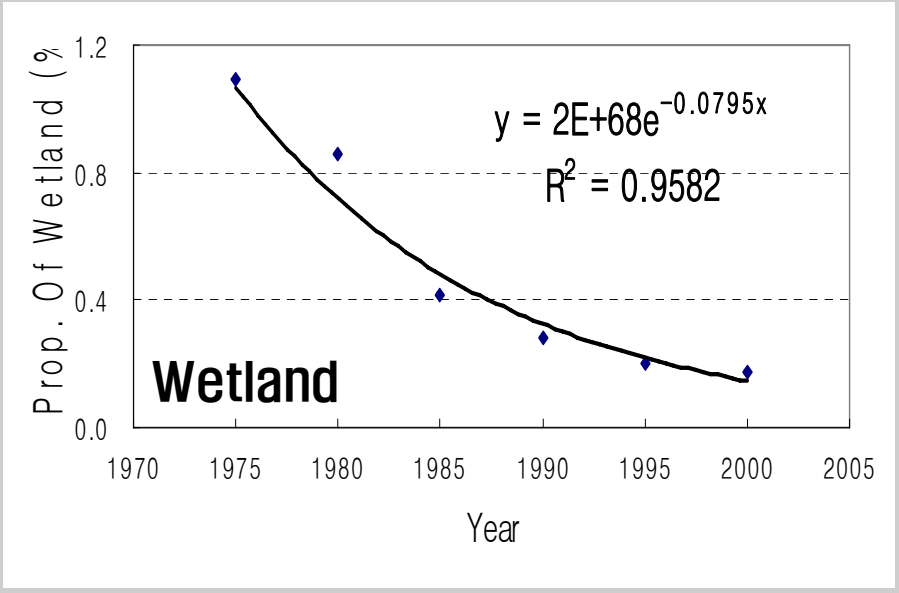
(Source : Ministry of Environment)

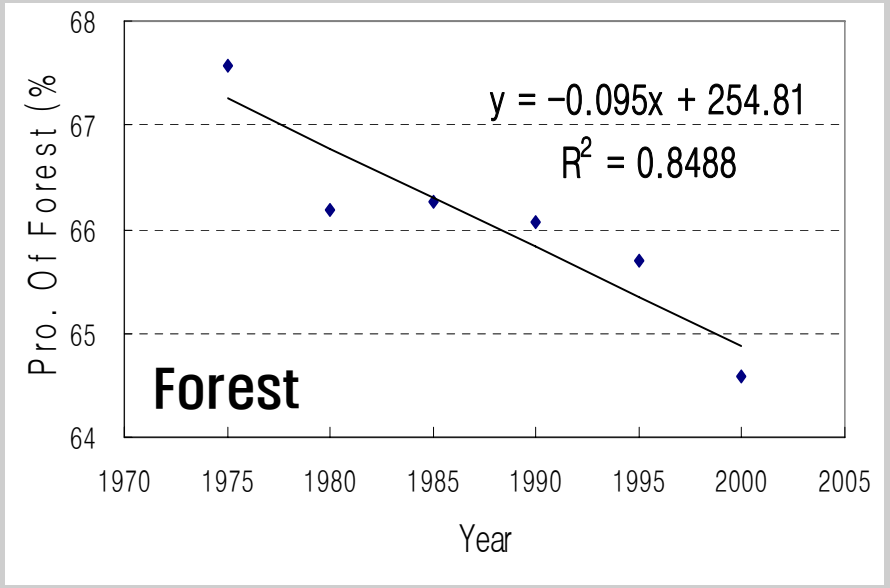


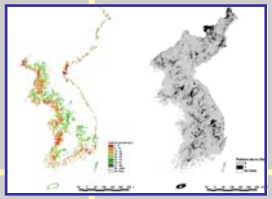
Land Use Changes from 1970s





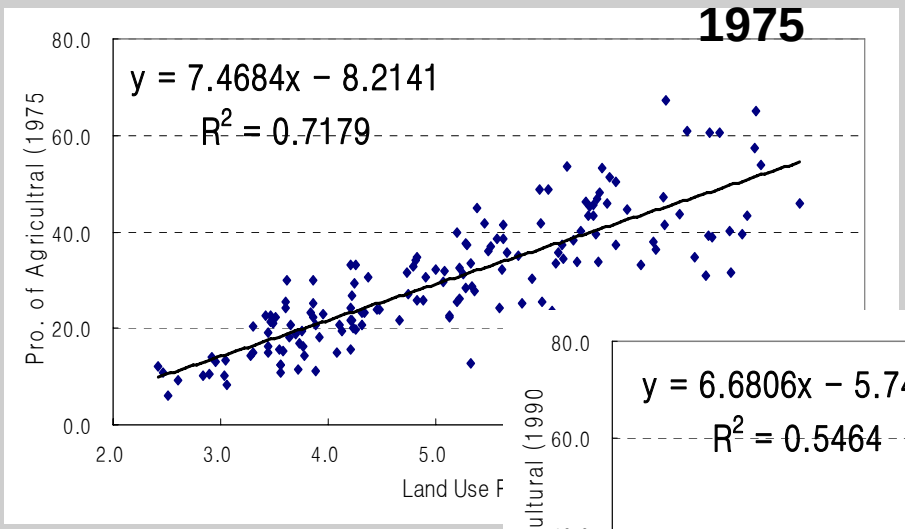


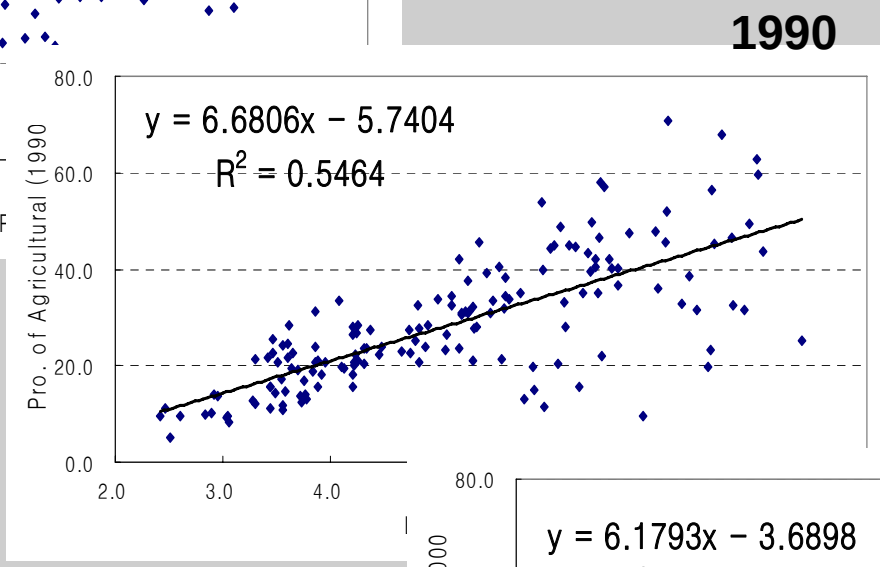


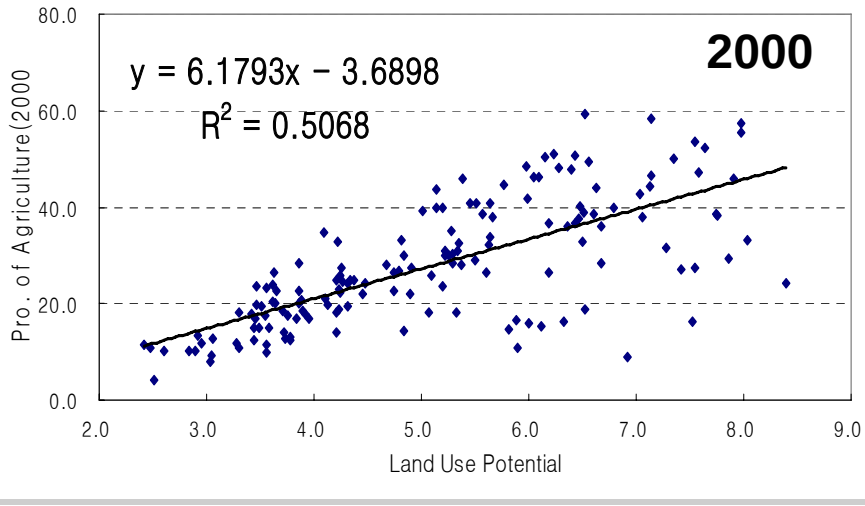


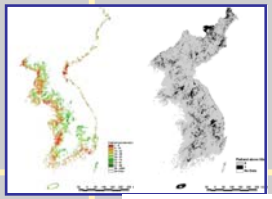
Land Use Potential Mapping: Implication

Land Use Potential vs. Agriculture



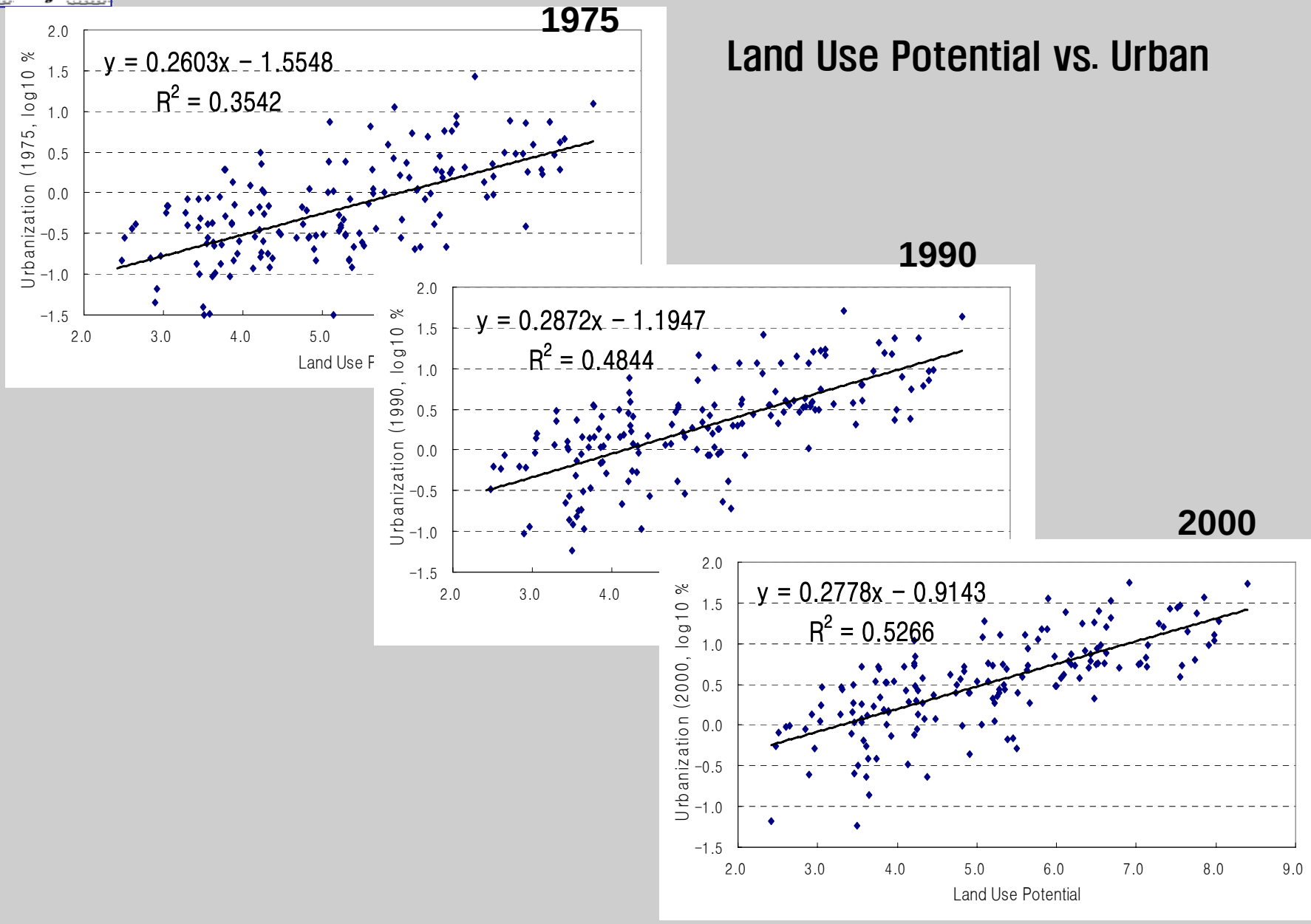


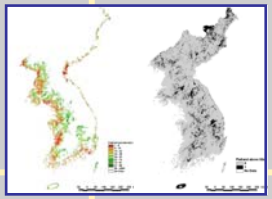




Land Use Potential Mapping: Implication

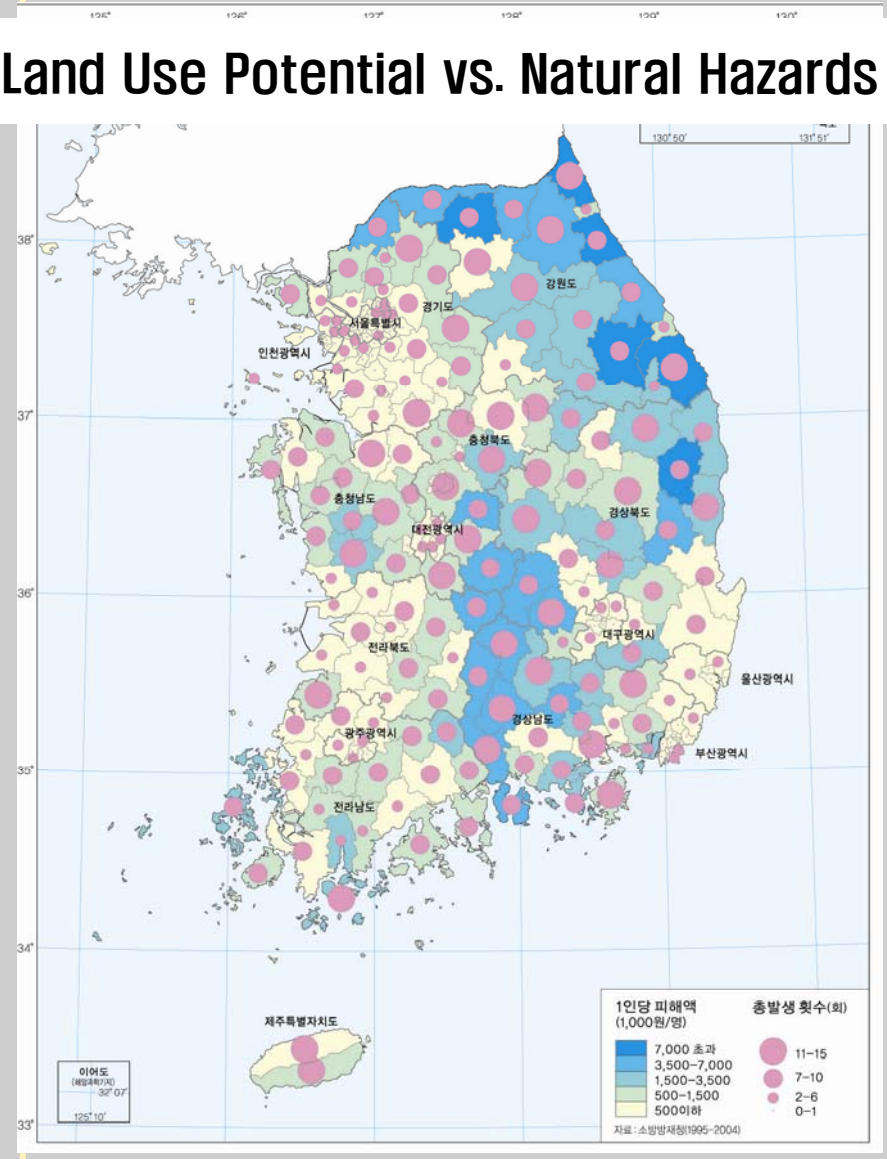
Land Use Potential vs. Urban

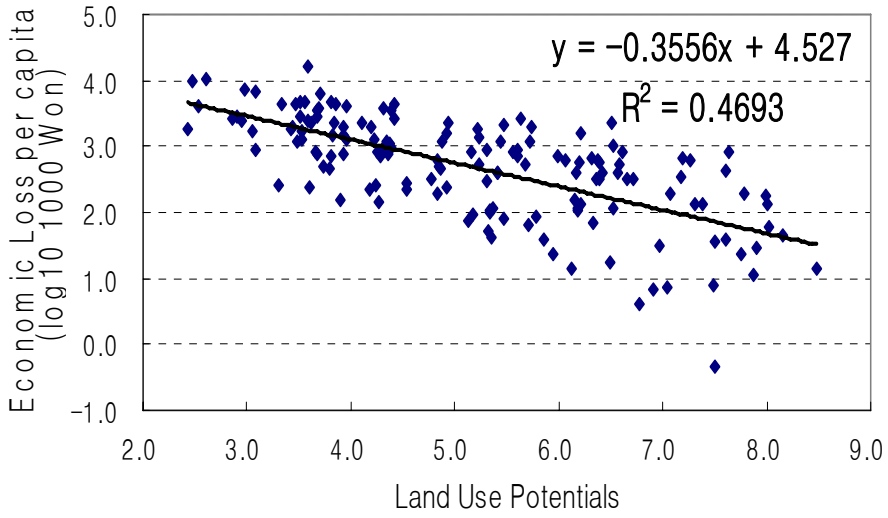


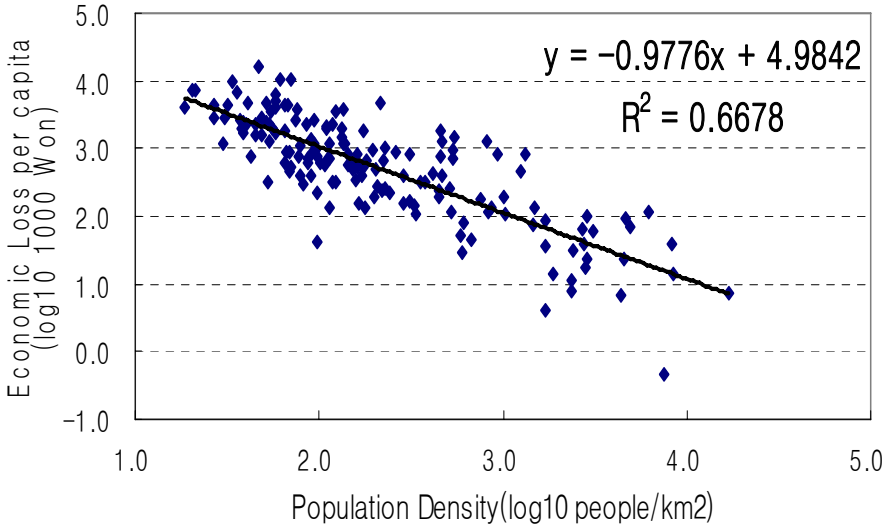


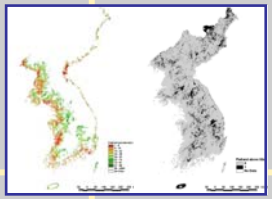
Land Use Potential Mapping: Validation

Land Use Potential vs. Natural Hazards

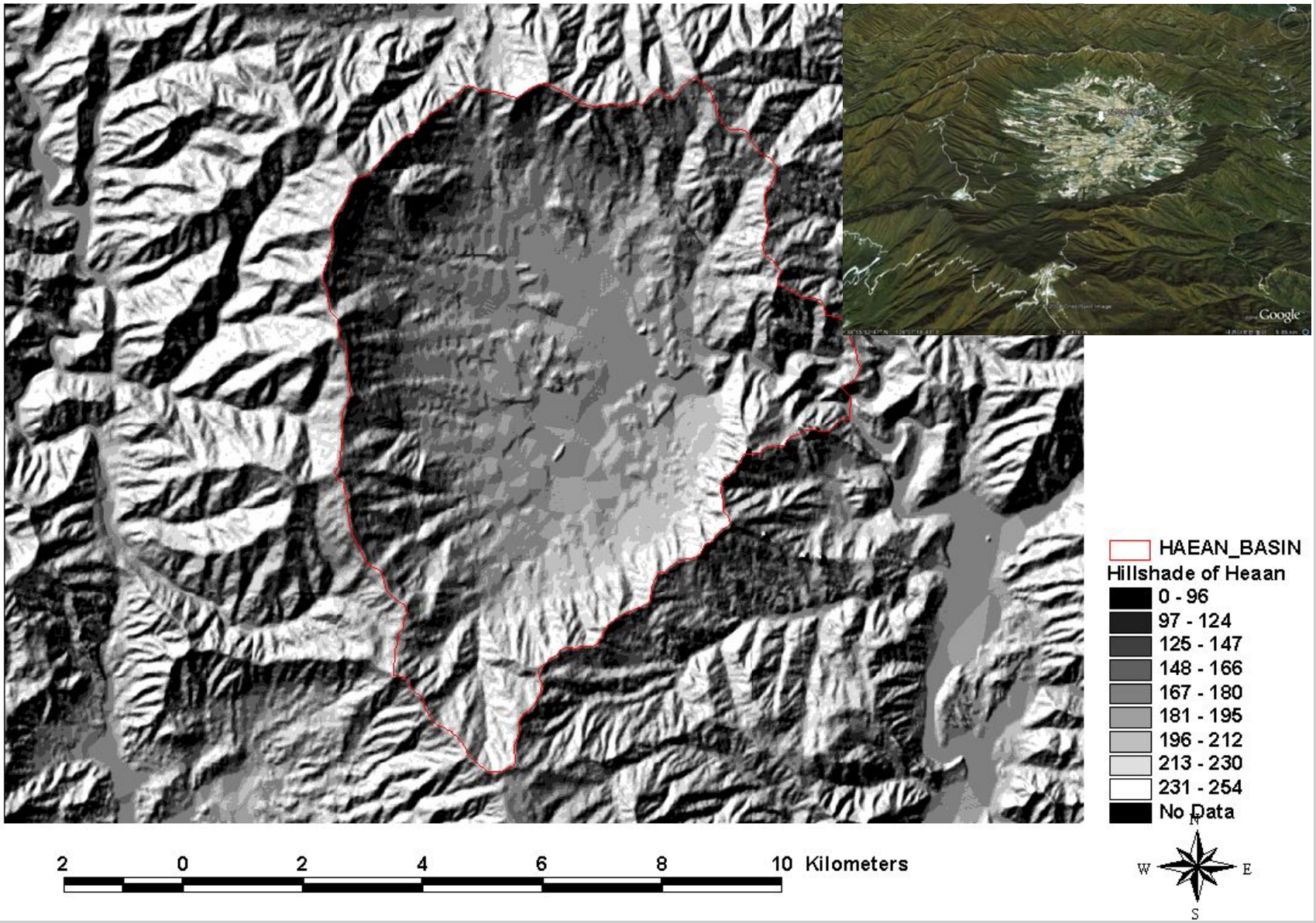


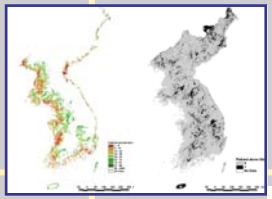




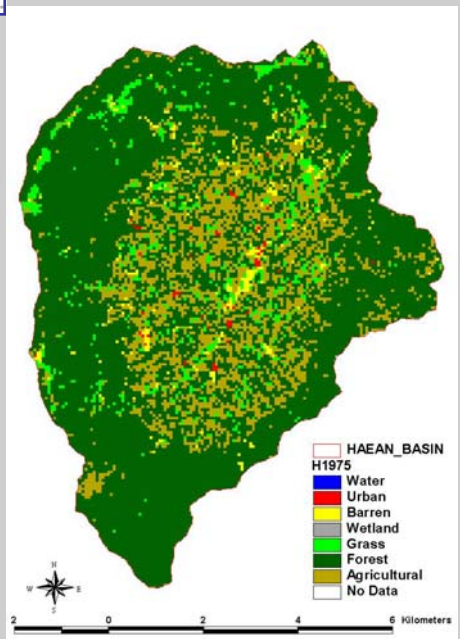


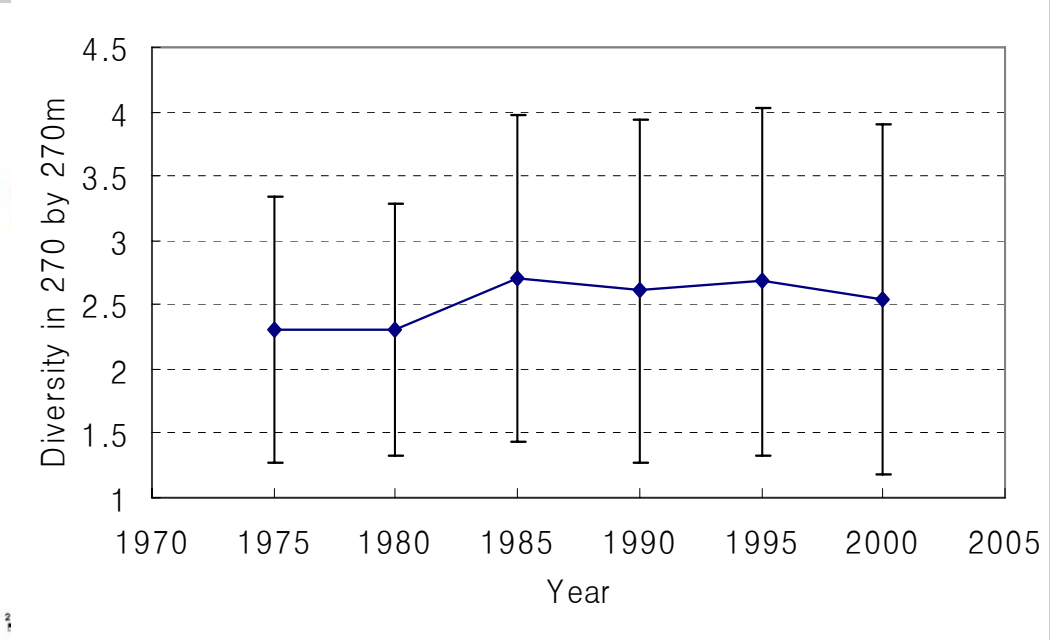
Land Use Changes in the Haean Basin

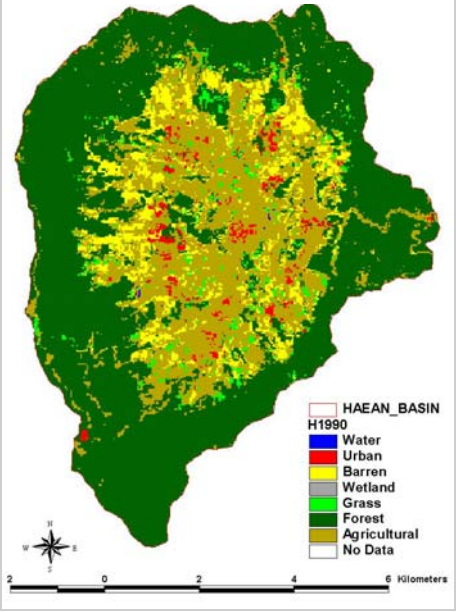


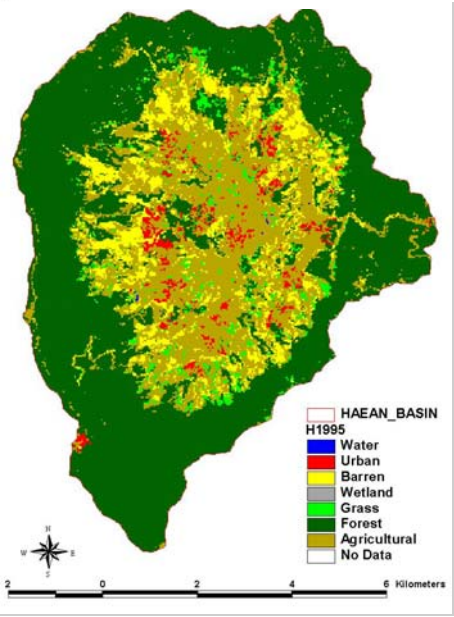


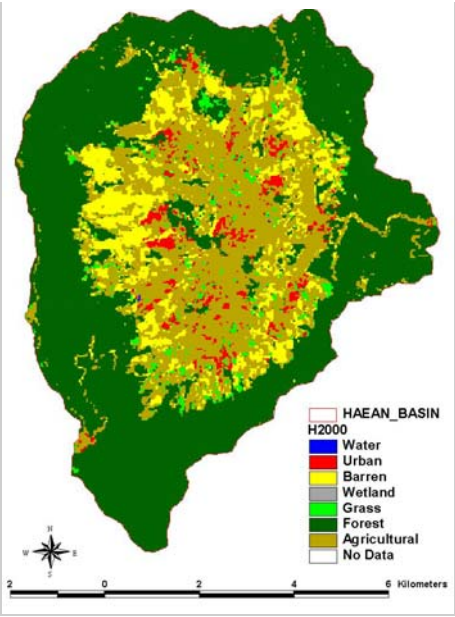
Land Use Changes in the Haean Basin

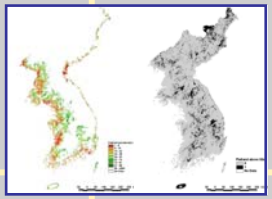




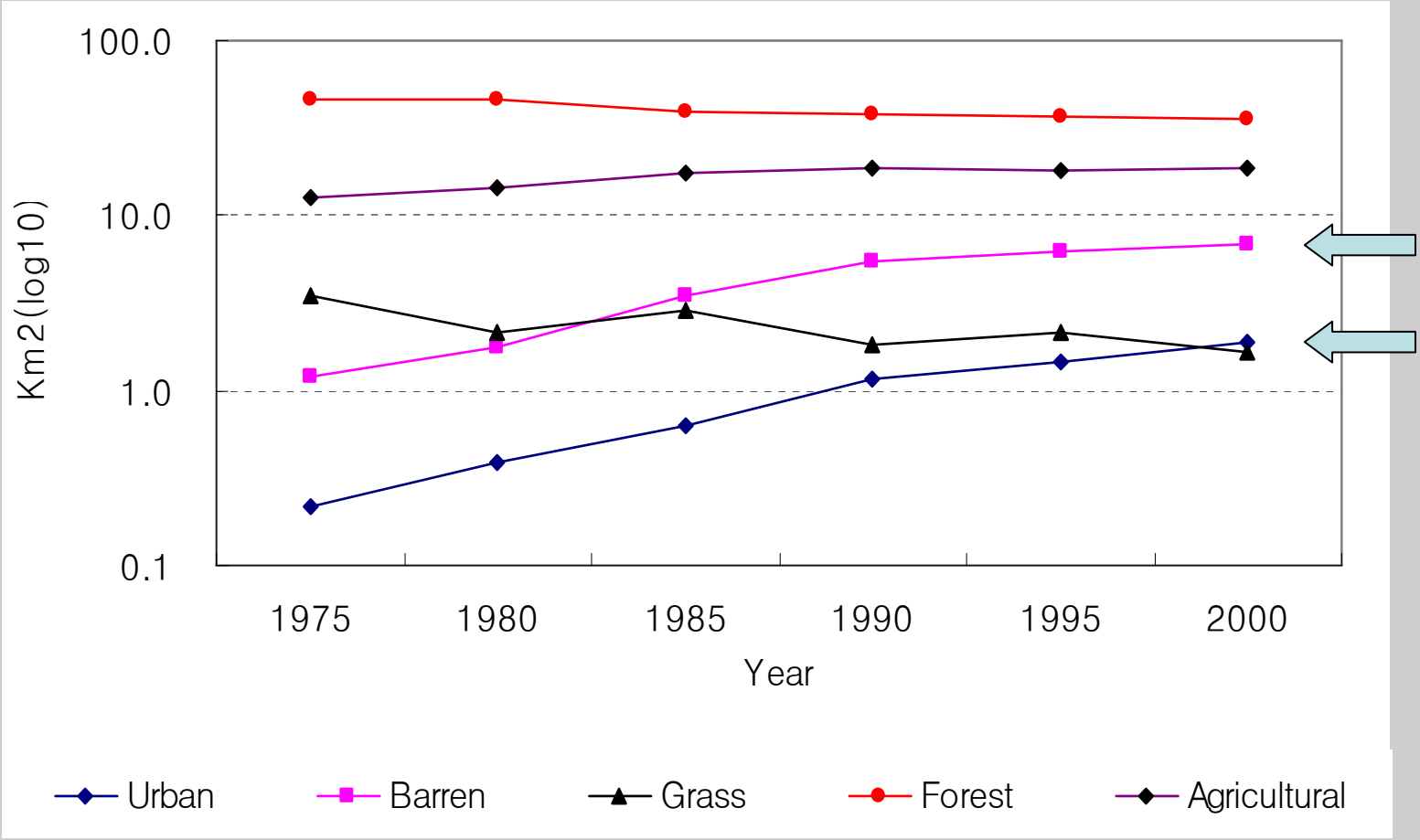


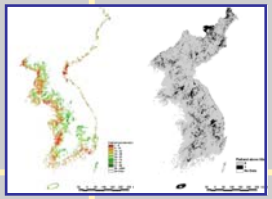




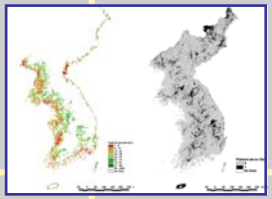


Land Use Changes in the Haean Basin

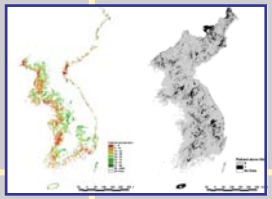




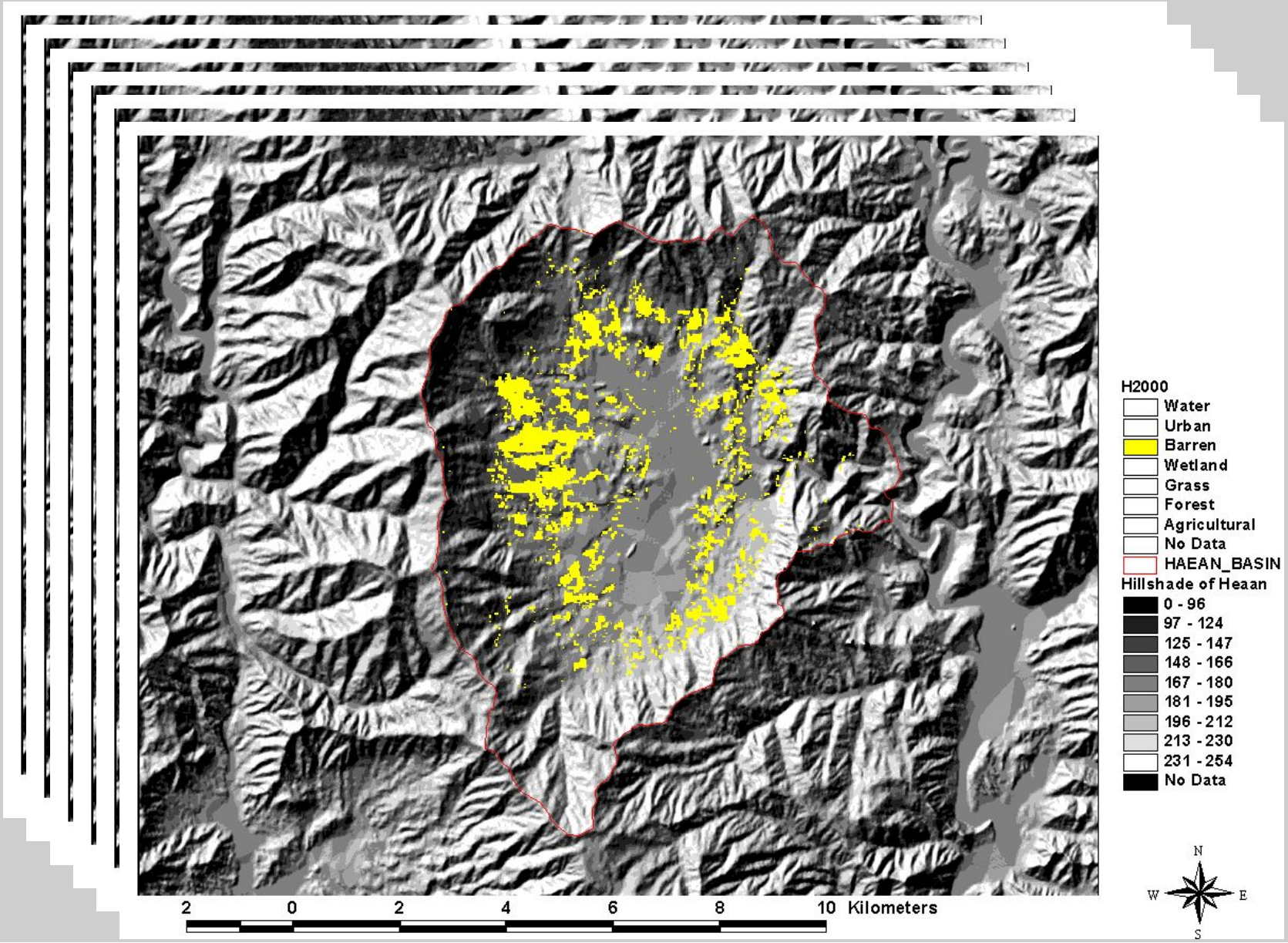
New forms of 'Organic Farming'

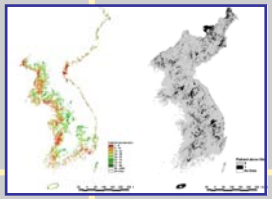


New forms of 'Organic Farming'

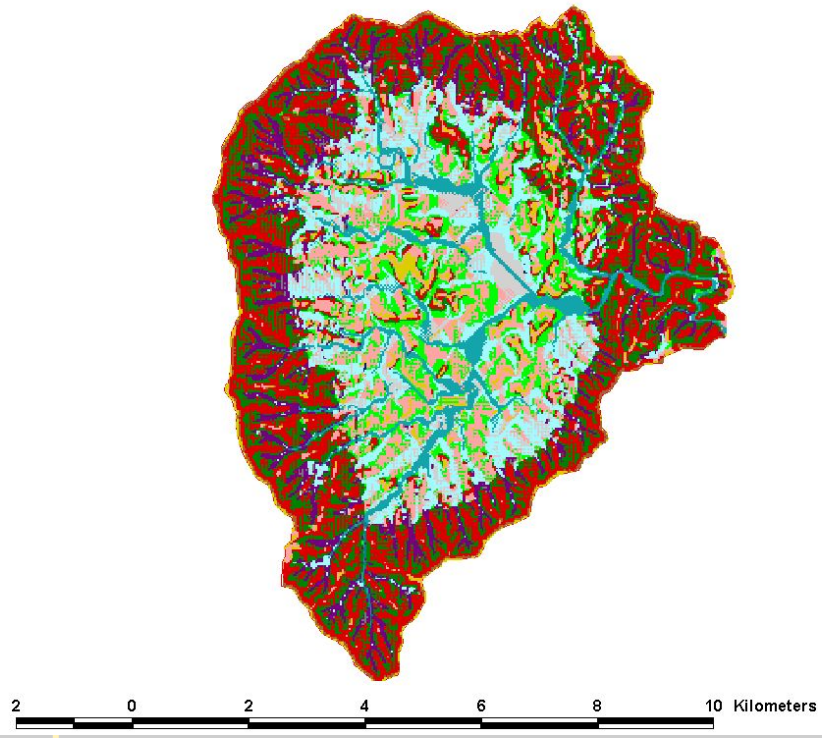


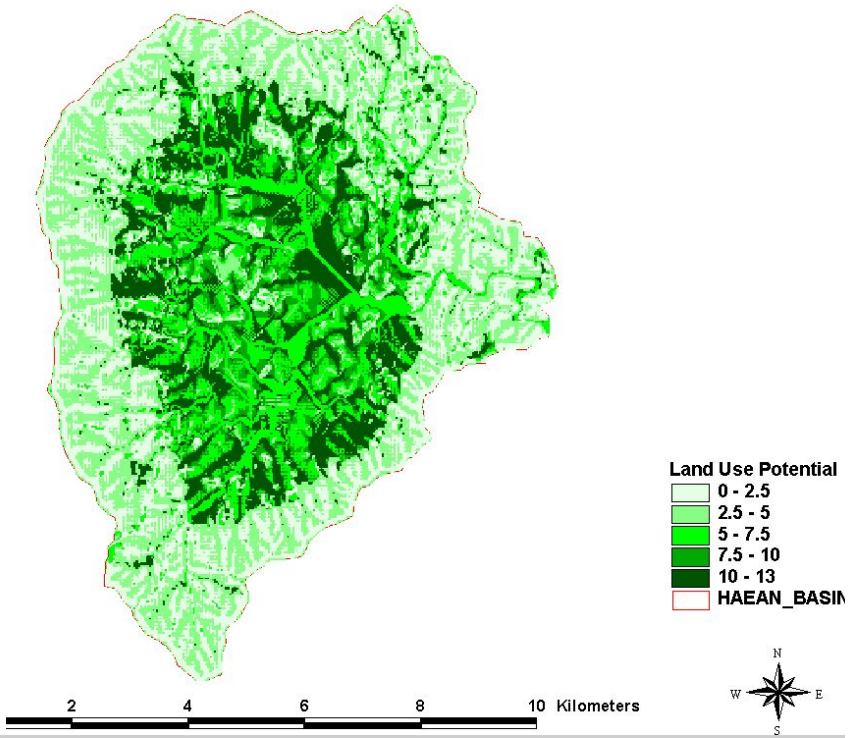
Land Use Changes in the Haean Basin

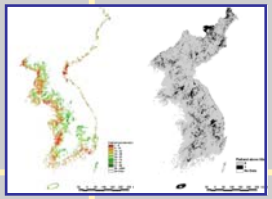




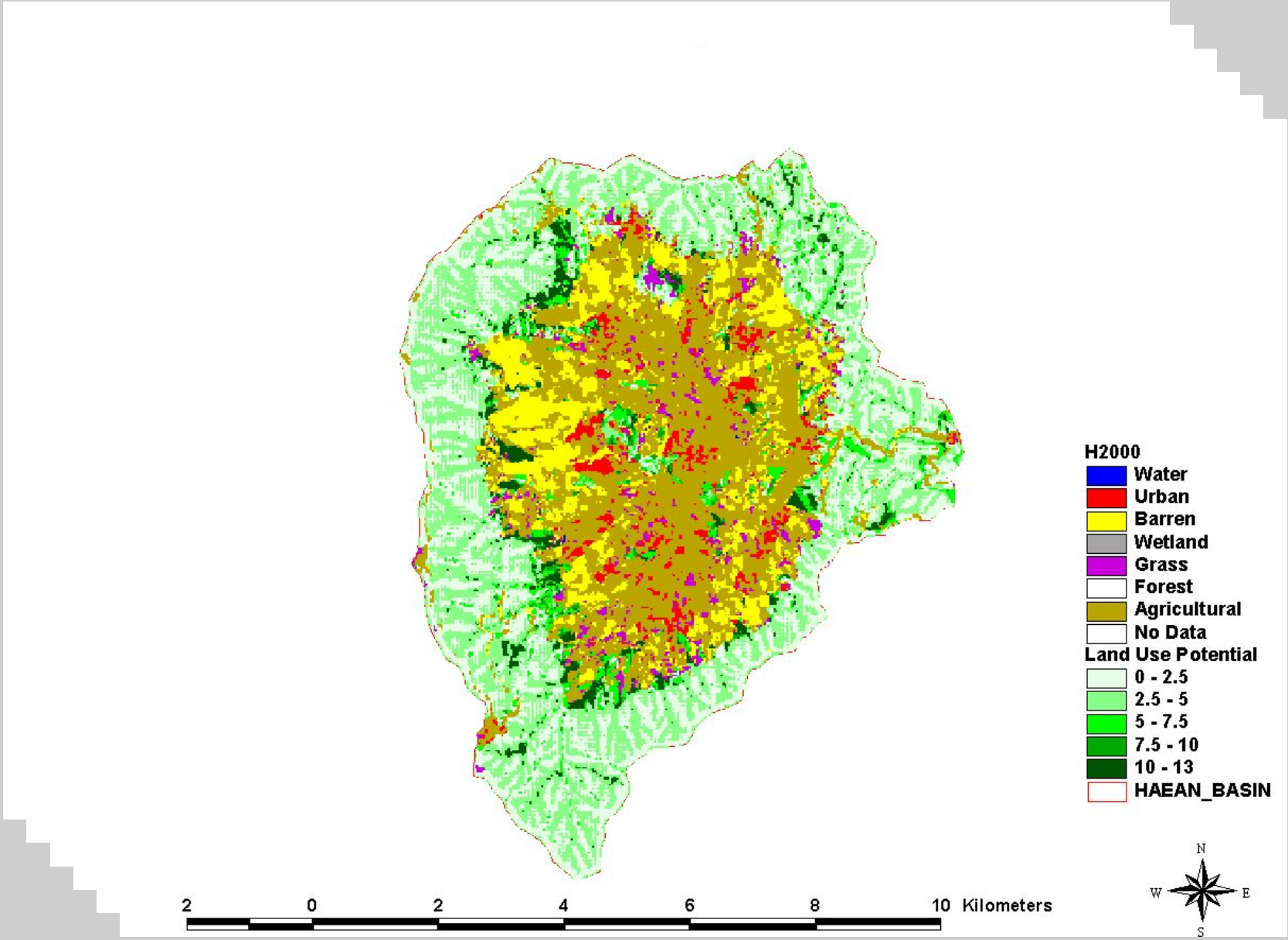
Land Use Potential in the Haean Basin

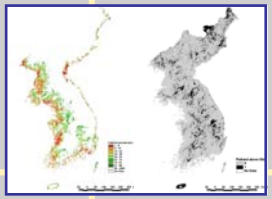






Land Use Potentials and Land Use Changes





Where are we heading to ?

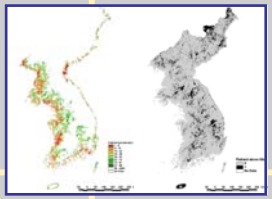
"Some Personal Thoughts"

1. The spatial dimension of economic growth → Maximization vs. Optimization of land use potentials ?

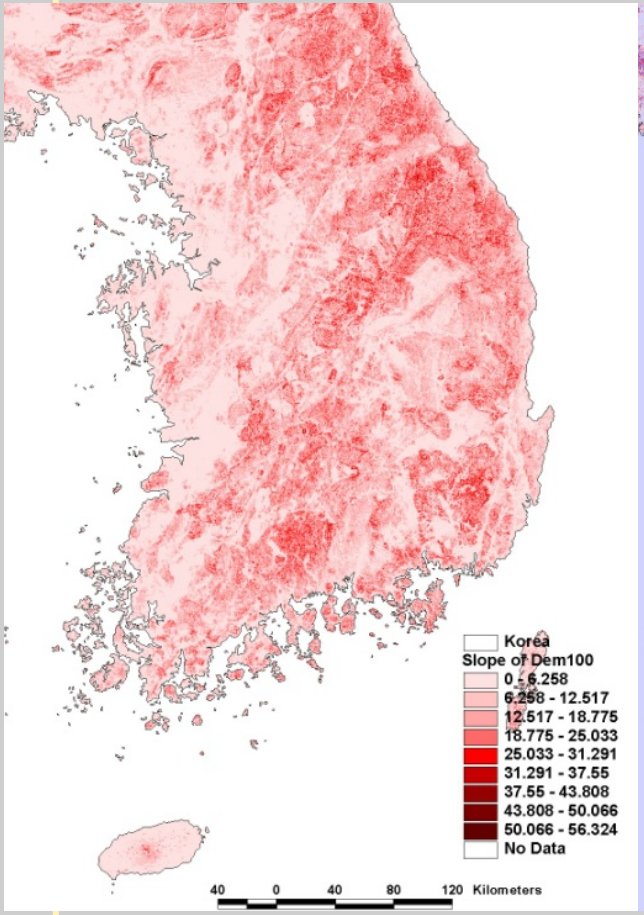
2. "Gardenized" Lands vs. Untouched lands;

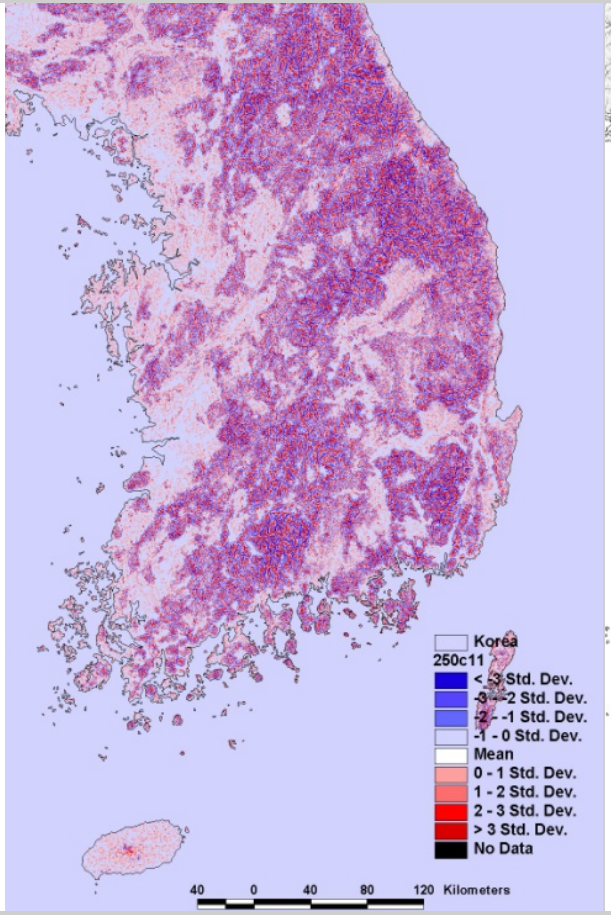
3. Development pathways → Spatial equality vs. spatial inequality;

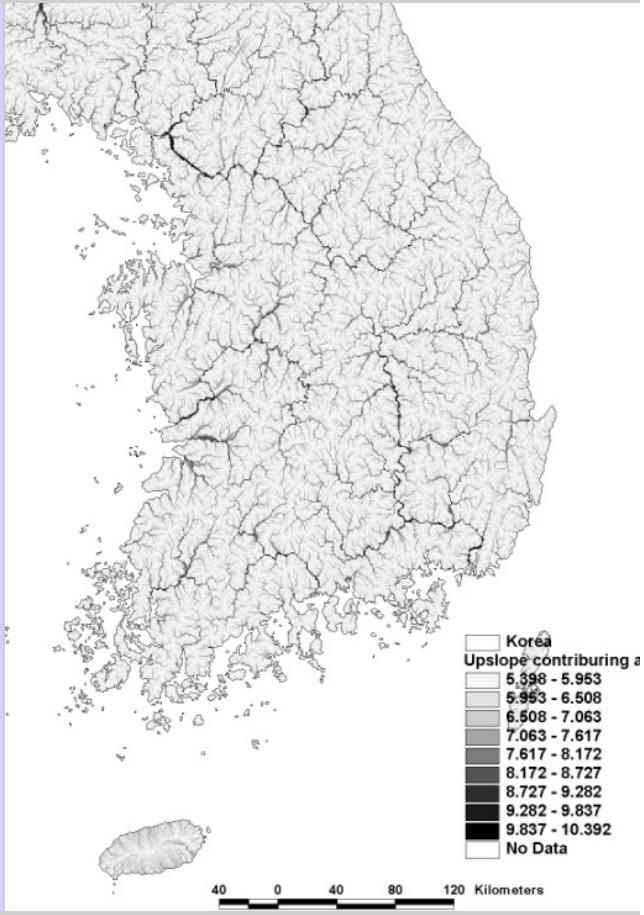
4. What is the best land use strategy of Korea in this ever globalizing world ?.

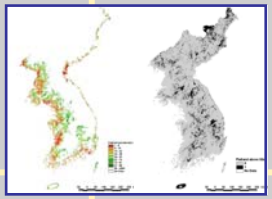


Land Use Potential Mapping: Implementation









Land Use Potential Mapping: Implementation