Thoughts on Promoting Low-carbon Economic Development in China

--Review on forest carbon sequestration and biofuel development from economic perspective

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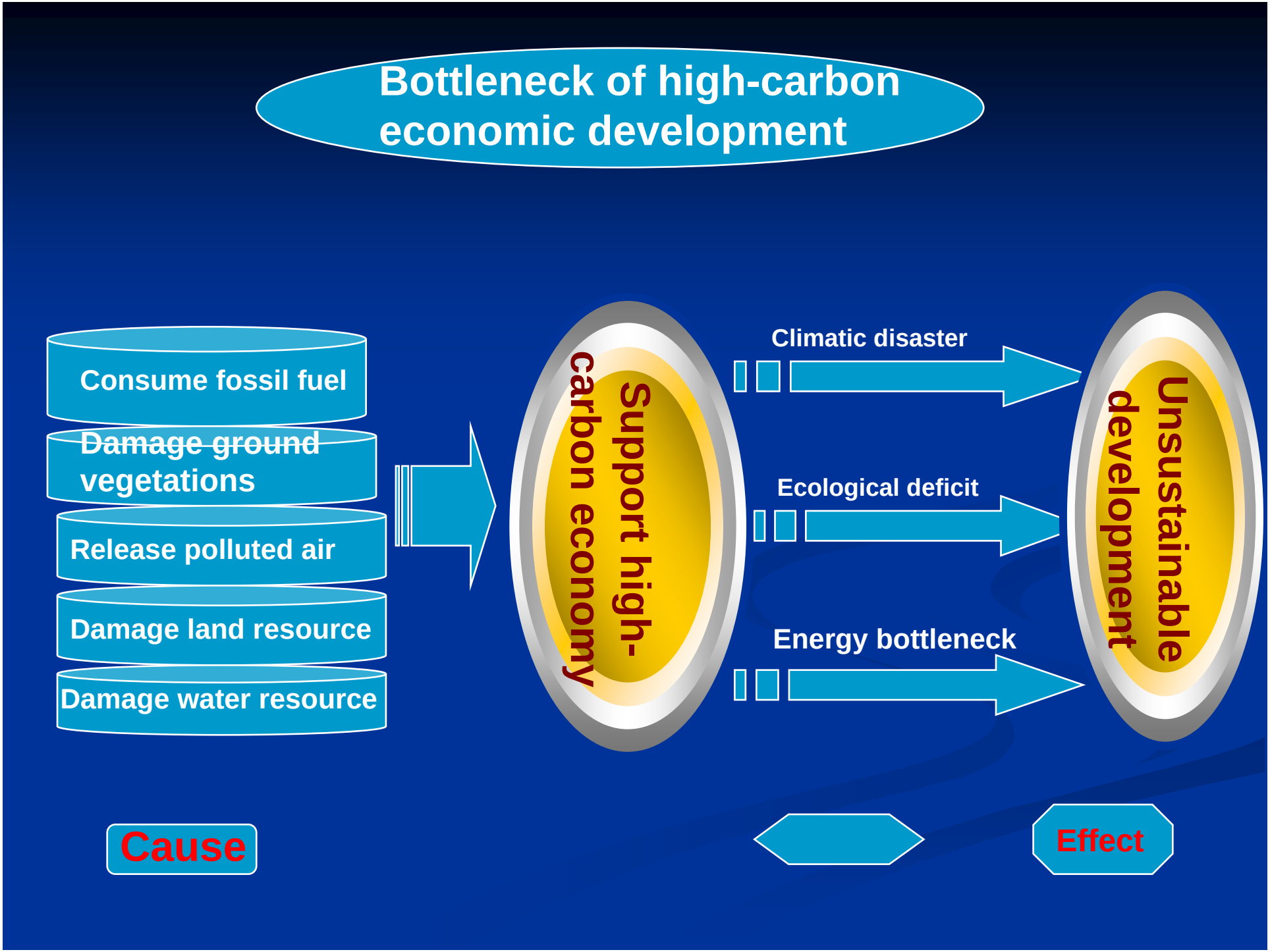
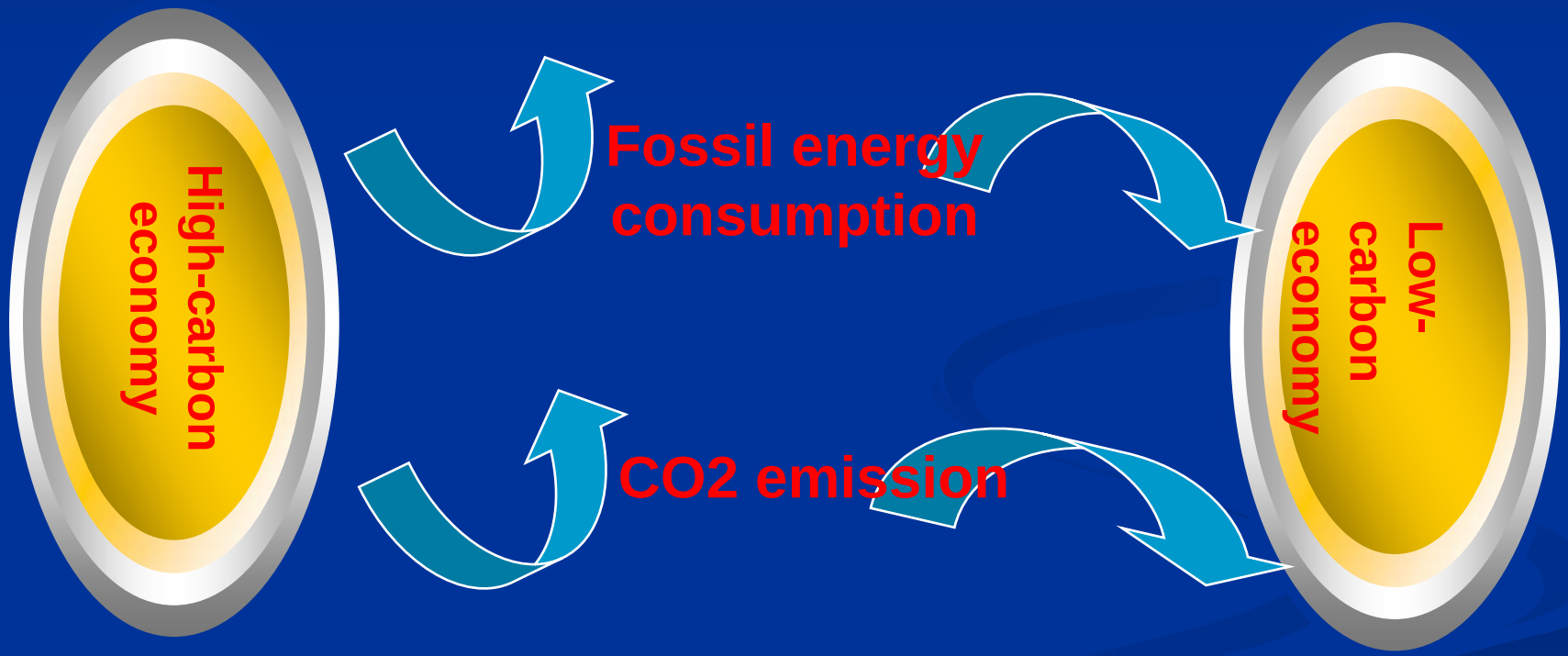
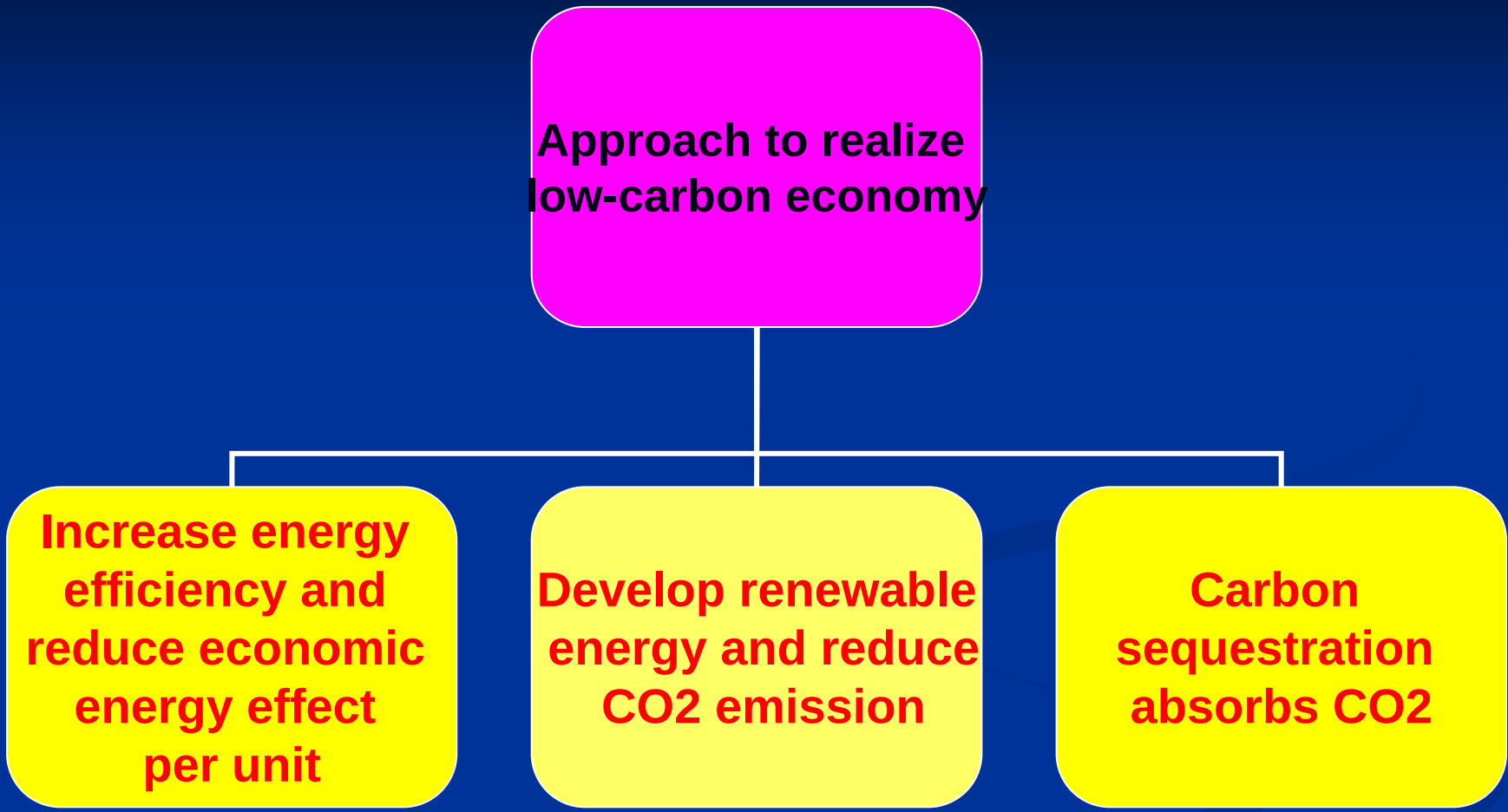

Bottleneck of high-carbon economic development
Consume fossil fuel
Damage ground vegetations
Release polluted air
Damage land resource
Damage water resource
Support high-carbon economy
Climatic disaster
Ecological deficit
Energy bottleneck
Unsustainable development
Cause
Effect

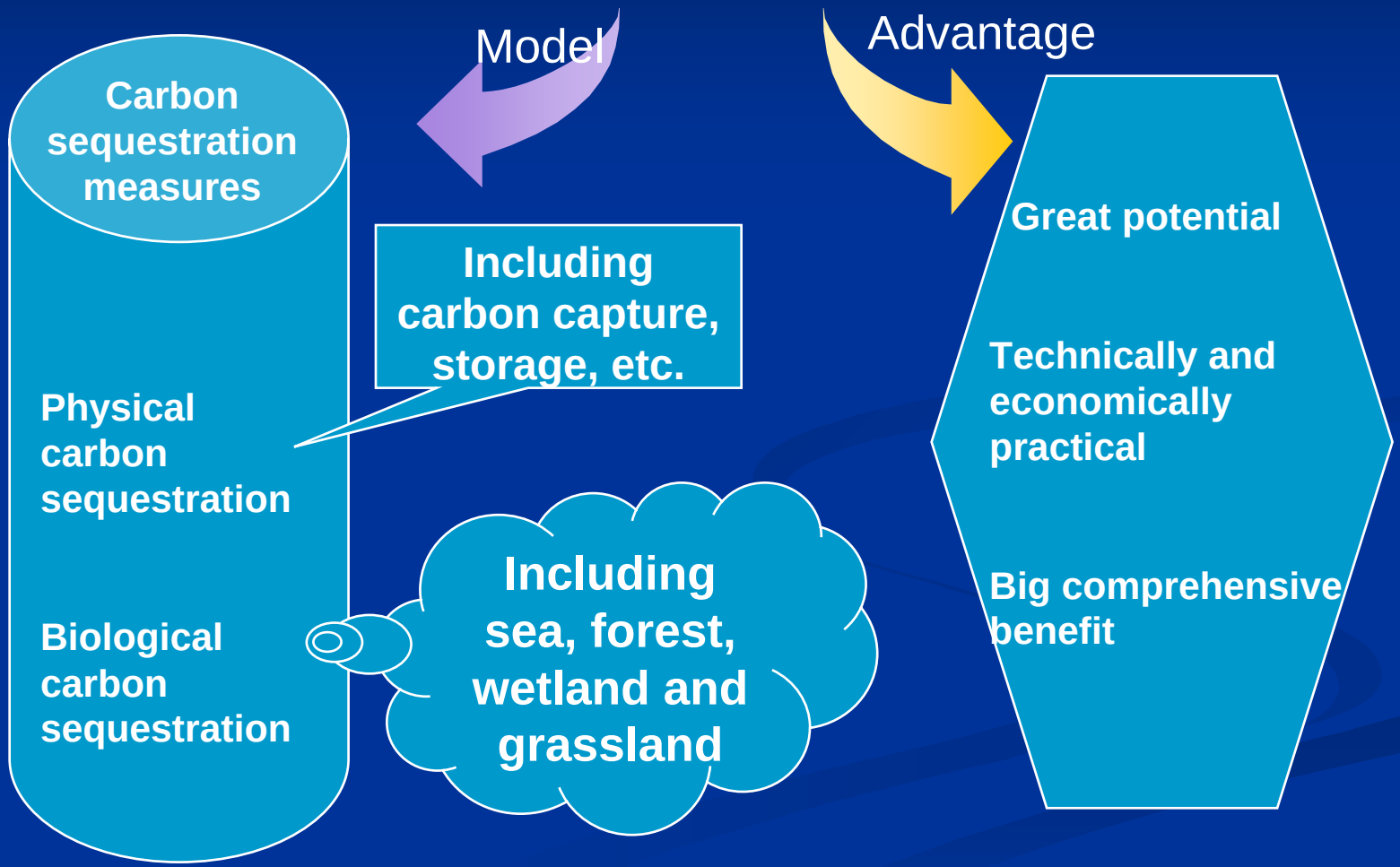

1. 水环境污染
2. 大气污染
3. 固体废弃物污染
4. 酸雨
5. 森林锐减
6. 土地荒漠化
7. 资源短缺
8. 生物多样性减少
9. 全球气候变暖
10. 臭氧层破坏

Major difference of two economic development pattern




Approach to realize low-carbon economy
Increase energy efficiency and reduce economic energy effect per unit
Develop renewable energy and reduce CO2 emission
Carbon sequestration absorbs CO2

Forest carbon sequestration has become one of the essential measures of carbon sequestration



Forest carbon sequestration helps reduce the emission pressure

In 2003, if the coal had been replaced by natural gas and its use had been reduced by 1%, the CO2 emission was reduced by 0.74%, GDP was reduced by 0.64% and the residents' welfare was reduced by 0.60% (Wei Yiming), together with the job opportunities were reduced by 4.7 million.

If afforestation is used to offset equal volume of emission (about 23 million tons), the cost will be around RMB 600 million yuan, GDP will be less influenced and nearly 10,000 job opportunities will be increased.

Main sources of forest carbon sequestration in China

Compulsory management of ecological forest: Logging ban or restriction

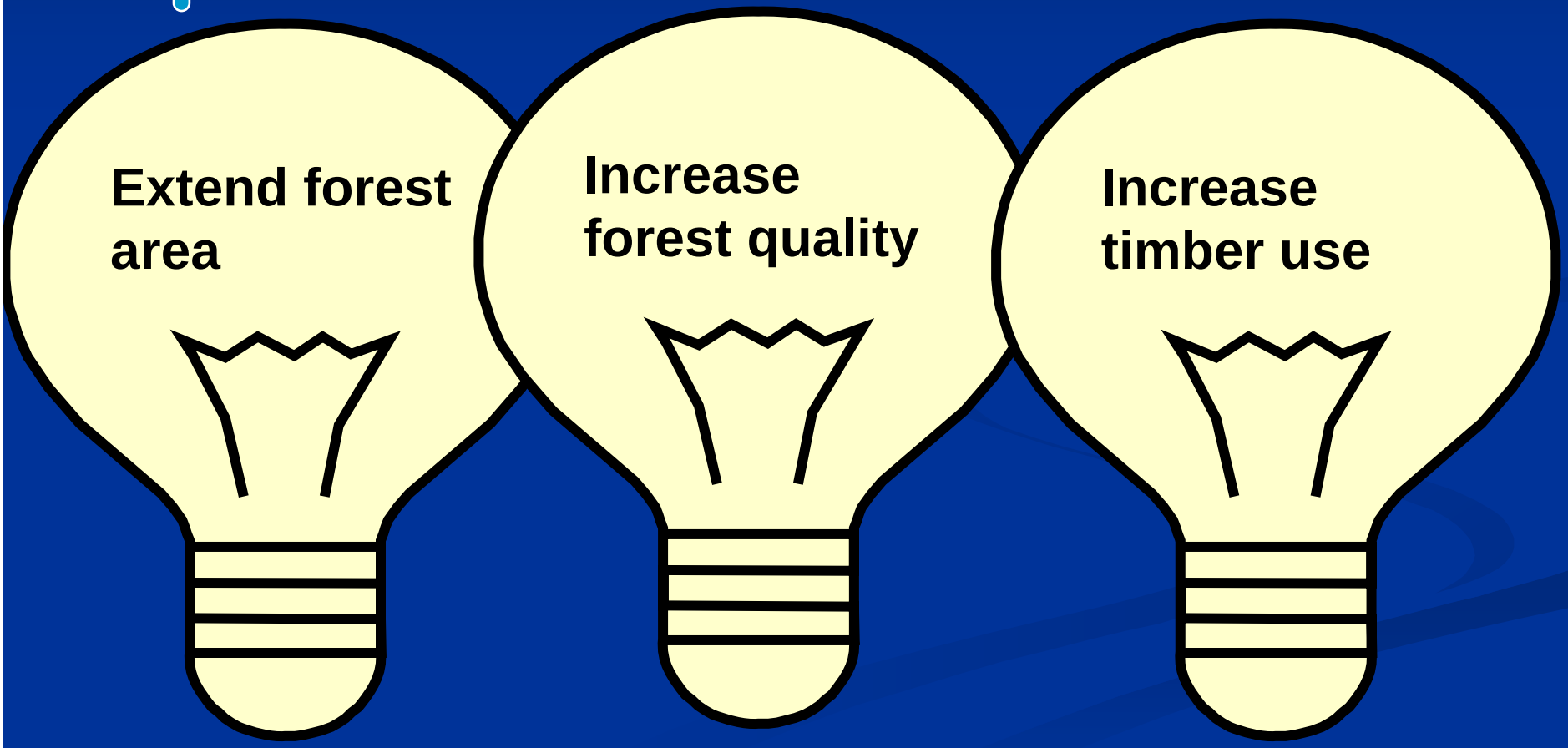
Investment in ecological construction of forest by the Central Government

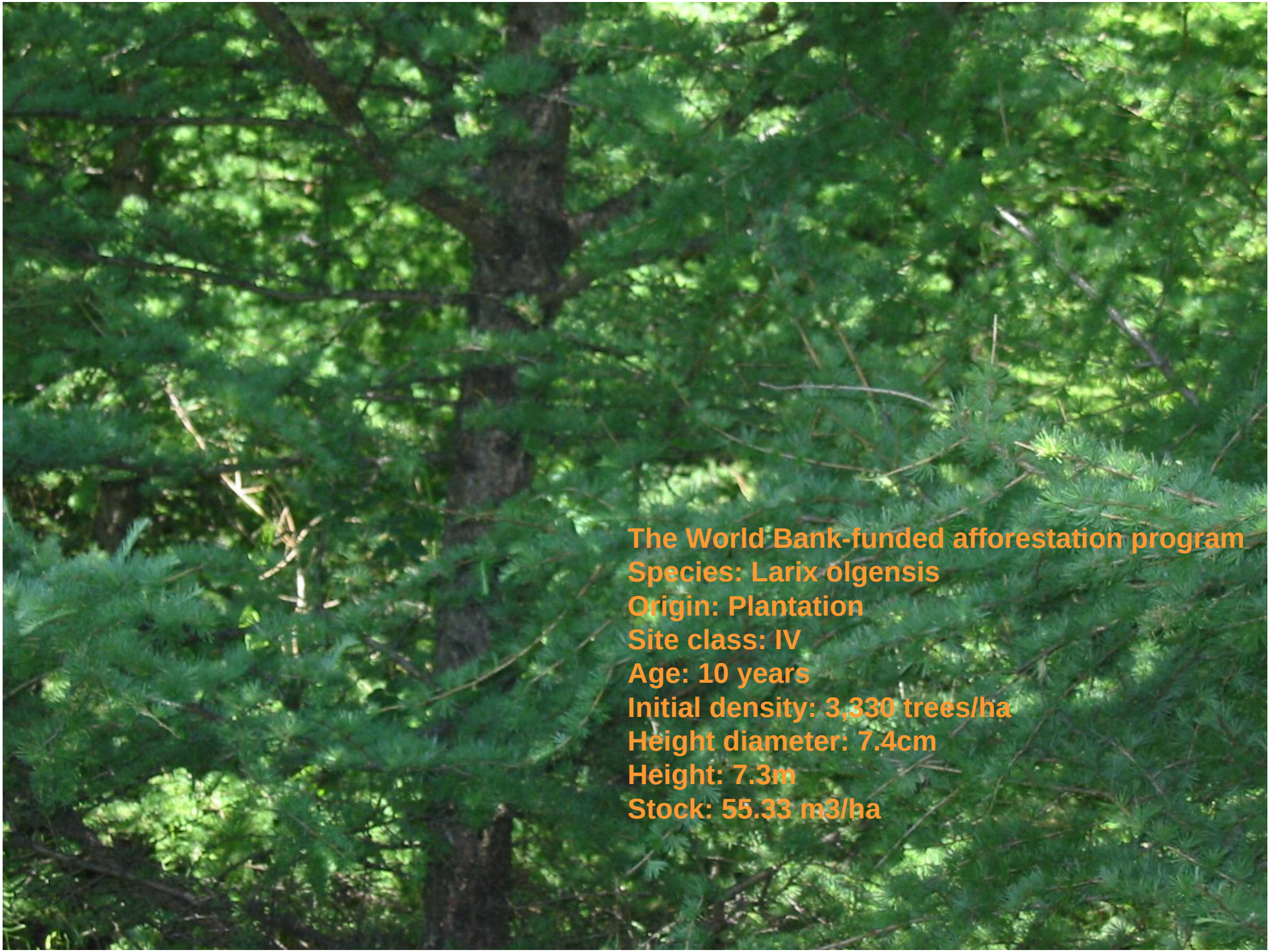
Construction of commercial forest

Forest carbon sequestration nationwide is around 500 million tons

Increase potential of forest carbon sequestration in China

Current carbon sequestration of forests only accounts for 44.3% of the potential storage capacity




The World Bank-funded afforestation program
Species: Larix olgensis
Origin: Plantation
Site class: IV
Age: 10 years
Initial density: 3,330 trees/ha
Height diameter: 7.4cm
Height: 7.3m
Stock: 55.33 m3/ha

Forest bio-energy is an important part of biofuels

Future increase is limited

Current output (300 million tons of standard coals) has been used

Agricultural raw material: grain and crop straw

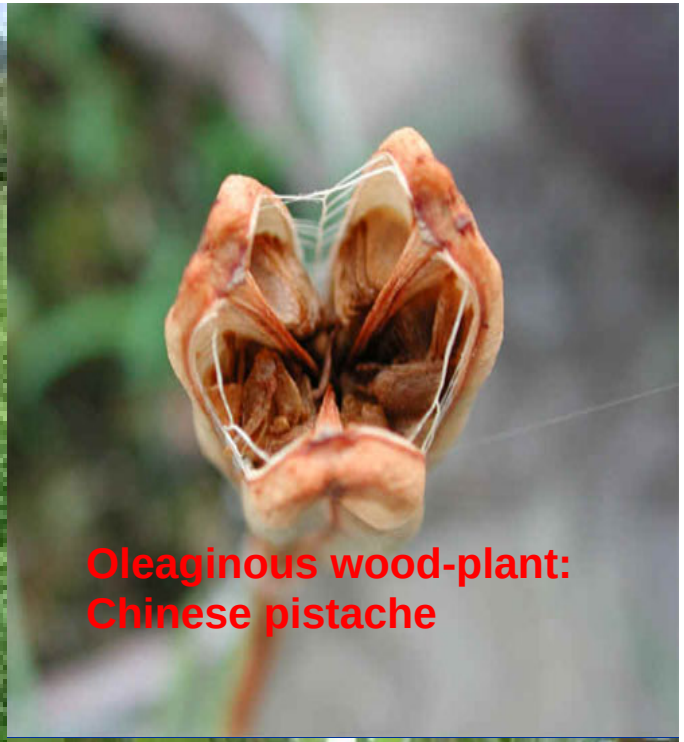
Forest raw material: Tree fruits and biomass

Current wastes volume 740 million tons of standard coals

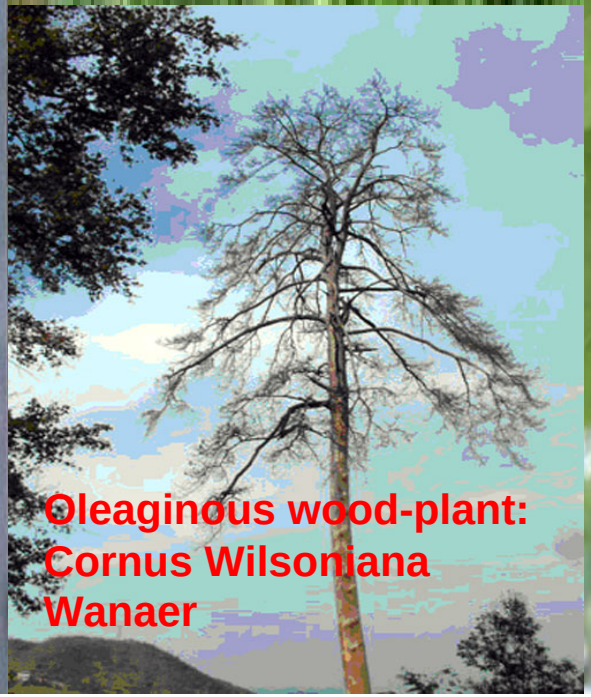
To 2020, 830 million tons of standard coals


Oleaginous wood-plant: Jatropha curcas
www.ycwb.com


Fuel forest


Oleaginous wood-plant: Chinese pistache


Oleaginous wood-plant: Shinyleaf Yellowhorn
北京科普之窗


Oleaginous wood-plant: Cornus Wilsoniana Wanaer


Oleaginous wood-plant: Vernicia fordii

Main influential factors to forest bio-energy development

Fossil energy consumes lower ecological environment cost

- Mineral resource cost: Low resource tax
- Environmental pollution cost: Low
- Carbon elimination cost: Currently none
- Ecological cost: Few
- Land use cost: Low

The cost of power generation by crop straws is higher than that by fossil fuel by about 50%.

Main influential factors to forest bio-energy development

Backward biomass conversion: High cost

High cost of biomass conversion: High investment threshold

Decentralized raw material: High cost

Grid-power is subsidized with RMB 0.25 yuan per kilo-watt, the raw material base also enjoys subsidy.

Self-development

Main influential factors to forest bio-energy development

Market access system

Market share system

Fiscal support system

External environment

Understanding on environment and energy safety is the main factor restricting forest carbon sequestration and bio-energy development

Low-carbon economy is not encouraged: Environment and energy safety have to give way to economic development

Radical development of low-carbon economy is encouraged: Intensively save energy and reduce emission

Progressive devleopment of low-carbon economy is encouraged: Develop forest carbon sequestration and bio-energy

Develop forest carbon sequestration and bio-energy to promote low-carbon economy

Reinforce publicity and consolidate understanding

Integrate forest carbon sequestration and bio-energy development Into energy-saving and emission reduction evaluation mechanism

Compulsorily implement renewable resource quota system

Develop forest carbon sequestration and bio-energy to promote low-carbon economy

Low carbon tax is levied for coal and domestic jet fuel.

Carbon fund

1/3 is used for ecological construction

1/3 is used for scientific and technological researches

1/3 is used for renewable energy production

Initiate desertification control project, reinforce wetland conservation and increase ecological compensation standard.

Thank you!

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