

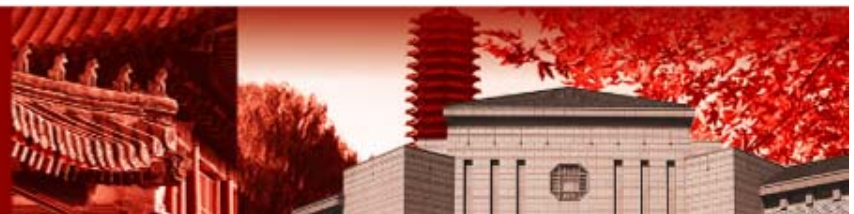
Global Outlook
200 Year Anniversary of the KSLA

Collective Forest Tenure Reform in China Implications and Challenges

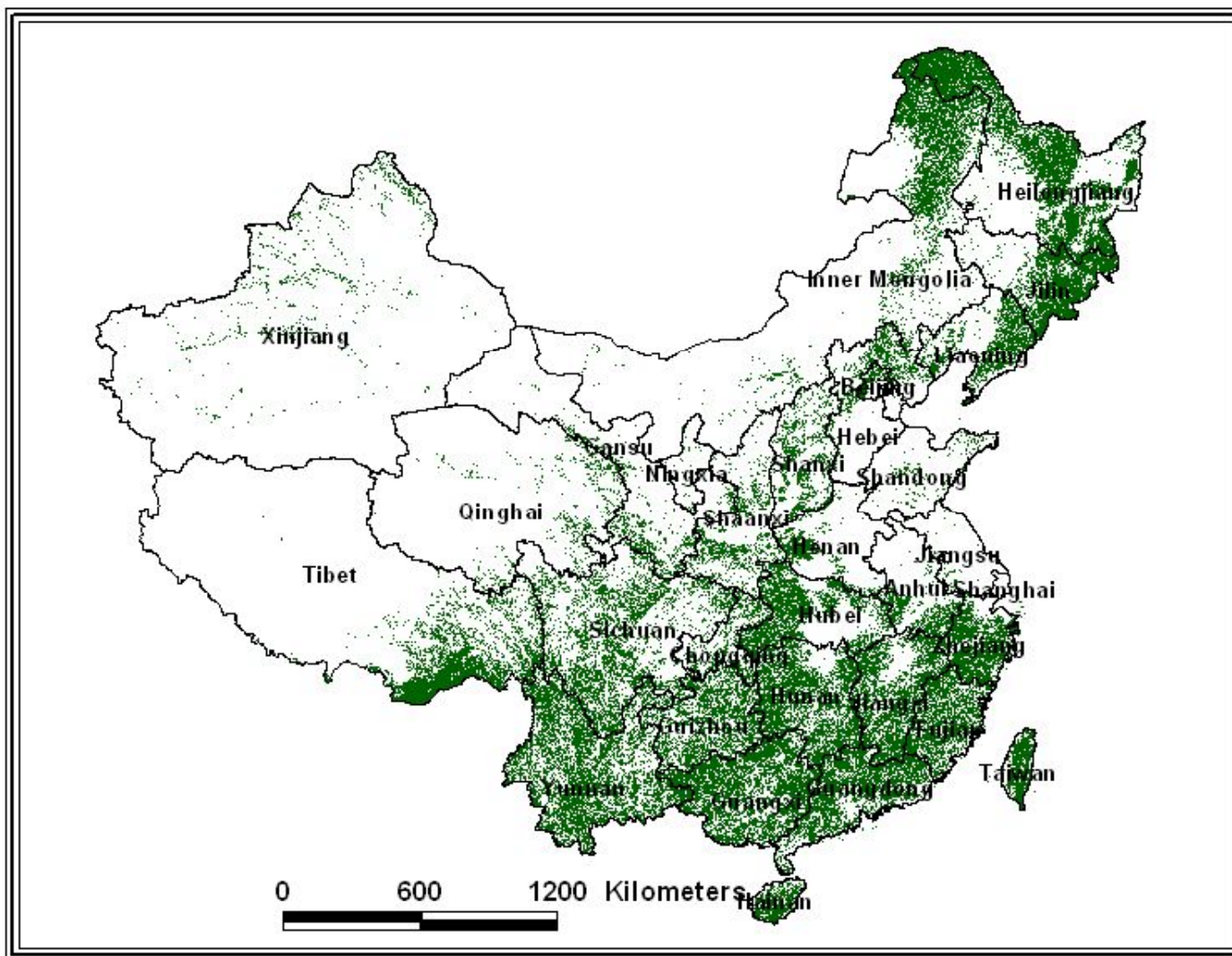
Jintao Xu, Peking University
January 30, 2012, at KSLA



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Forest Distribution in China

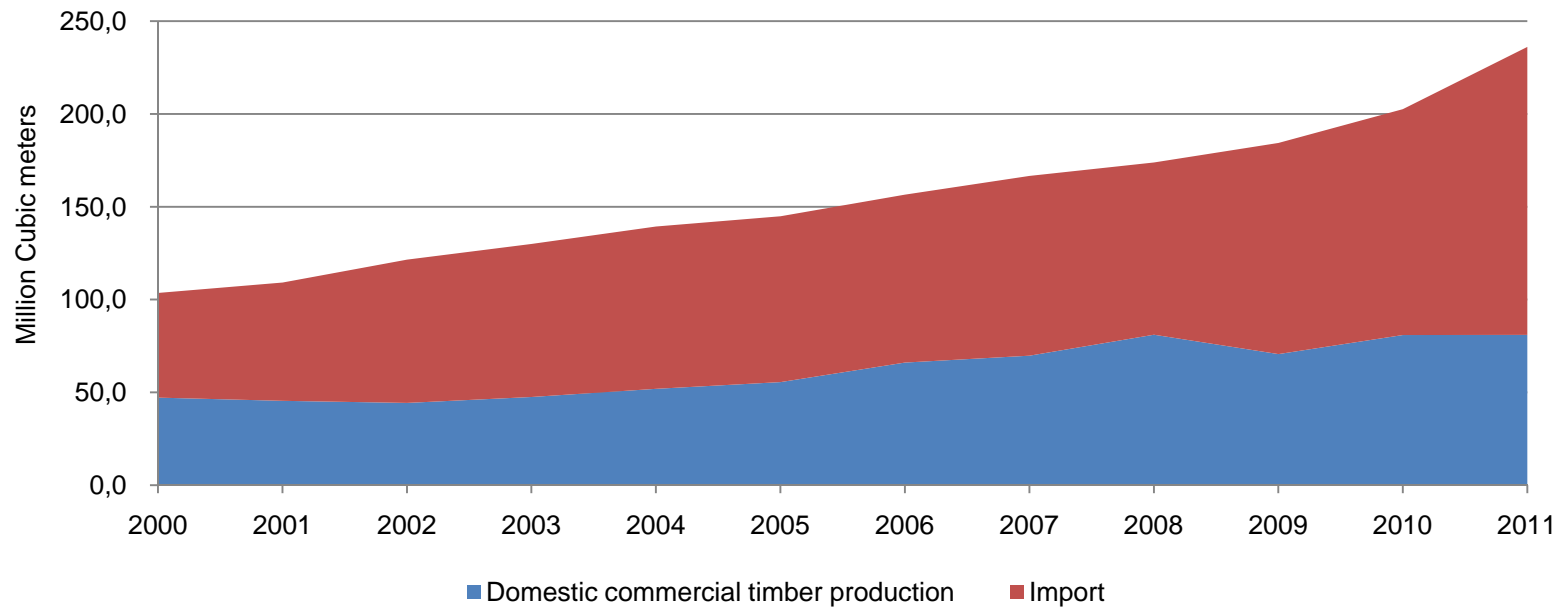


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As Economy Grows, China Becomes Largest Timber Resource Consumer and Product Supplier of the World

Timber Supply in China



All wood products converted into timber equivalent

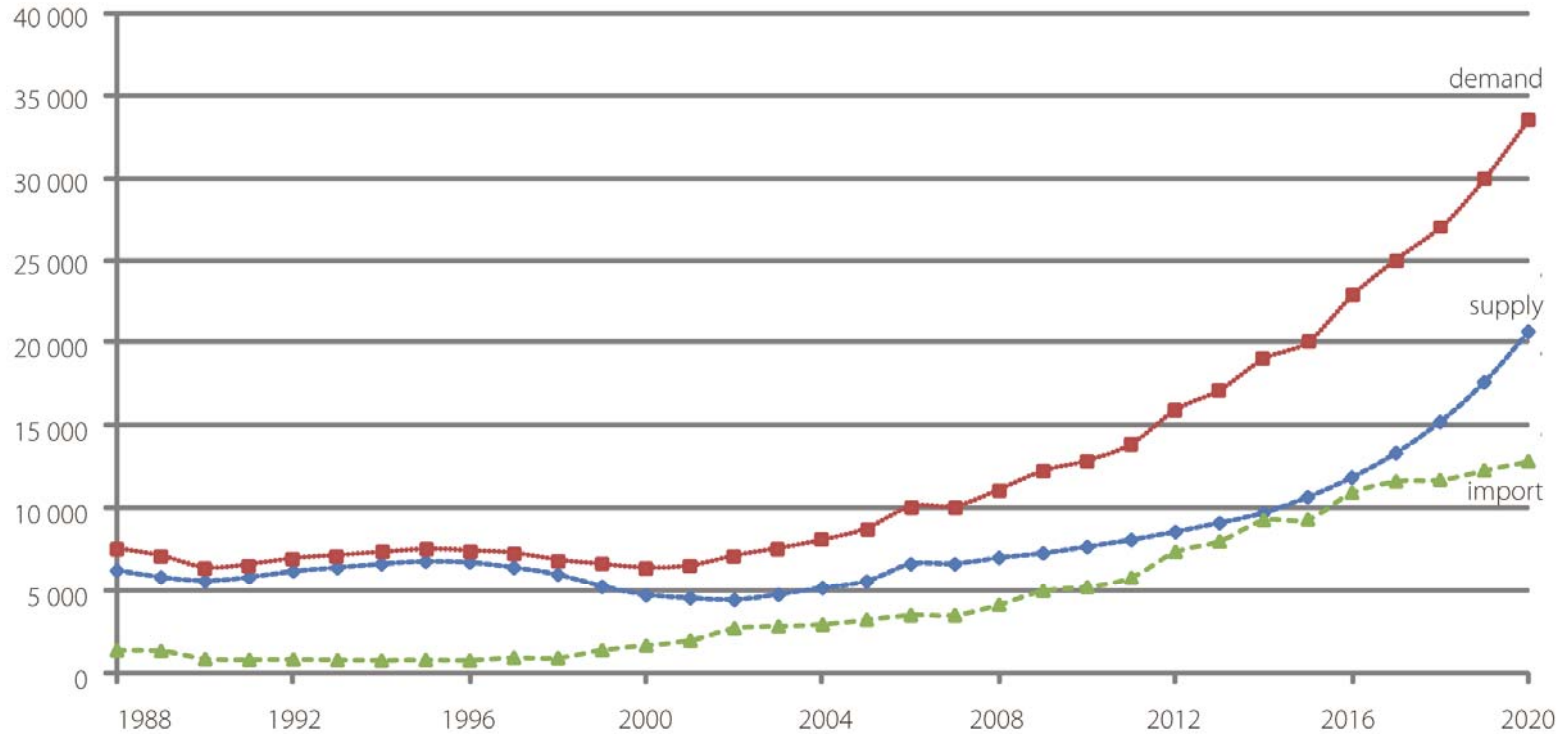


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Meeting the Growing Demand for Timber Resources is a Tremendous Challenge to China's Forest Sector, and the Supplying Tropical Nations

Estimation of China's Timber Demand, Supply and Import

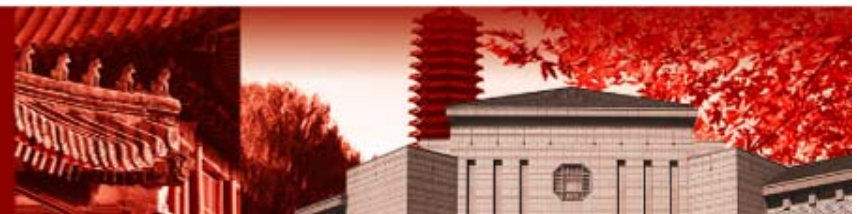


Projection of China's Timber Market until 2020.

(Raw Timber Only (Unit: 10K m³))



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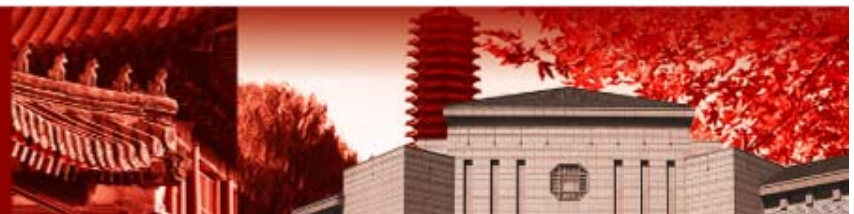


Addressing Resource Gaps

- Massive Afforestation Efforts funded by Government
 - More than 66 million ha new forests in 3 decades
 - Forest coverage rose from 12% in late 70s to 20% in late 2010
- Forest Management Scheme Changes
 - Engineering afforestation project management
 - Stopping land conversion program
 - Natural forest protection program
- Reforms, Reforms
 - Collective forest tenure reform
 - (and the difficult process of state forest reform)



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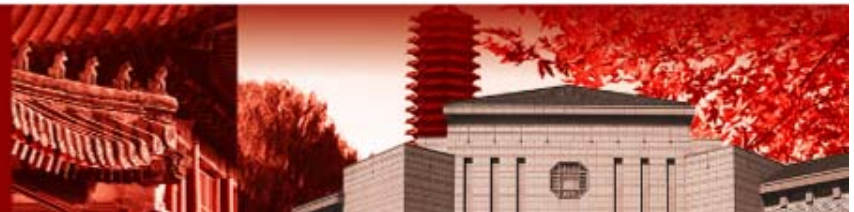


Forest Tenure in China

- Two ownership types
 - State
 - ~40% forest area and 68% volume;
 - Managed by state forest enterprises and farms
 - Collective
 - 60% area and 32% volume
 - Growing share of timber production
 - Diversified management schemes



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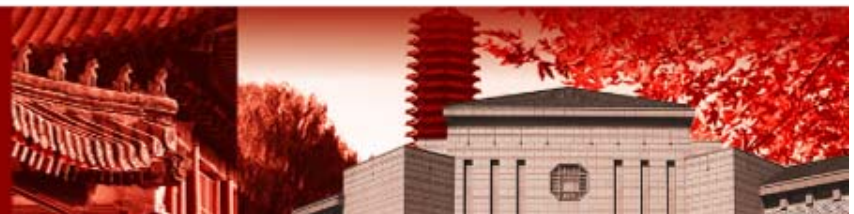


Two Rounds of Collective Tenure Reform

- First Round: 1981-1986
 - A fluctuating process
 - Different level of progresses among provinces
 - Tenure remains controversial Issue
- Second Round: 2000-,
 - 2003-2007, 14 provinces announced new reform policy
 - In July 2008, Central Government Reform Policy
 - By 2010, 20 provinces with reform policies



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What's New

- Fujian
- Local Initiatives to National Consolidation
- “Village Autonomy”
- Longer contract
- Rich rights
- Forest Certificates



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Significance of the Reform

- A step toward completion of rural land reform
 - 120 million ha of registered agricultural land
 - But, 167 million ha of registered forestland owned collectively (~60% nat'l total)
 - Reform affected 147 million ha forestland
 - Livelihood of ~70 million rural households
- Closure to China's New Countryside Initiatives
 - Ag land reform
 - Free election of adm village government
 - Financial transfer
 - Collective forest reform



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Potential Impacts

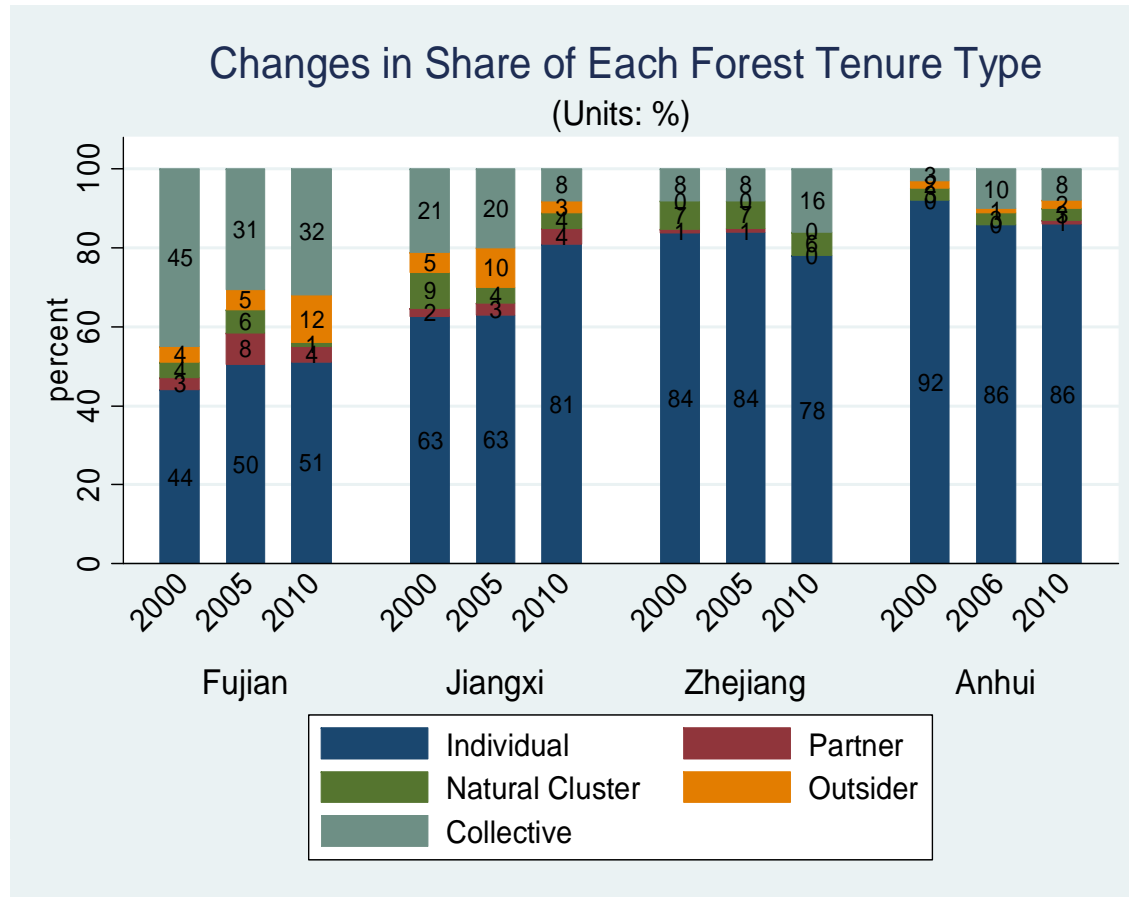
- Forest Management
 - Incentives for farmer and private sector investment
 - Better protection
 - Higher productivity
 - Forest policy reform
 - International supply chain
- Farmer Livelihood
 - Income and income structure
 - Labor allocation
 - Capacity for investment
- Social and Political Stability
 - Equity
 - Relationship between farmers and government
 - Village governance



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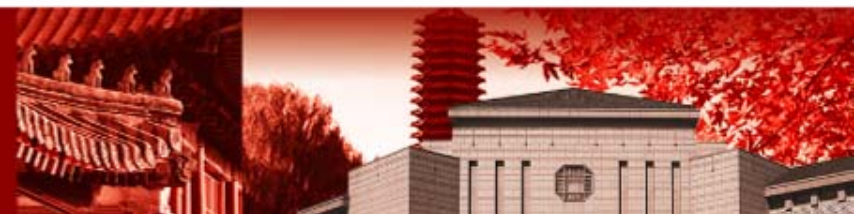
Progress of Reform (2000-2010)



- The reform policy significantly altered forest tenure structure in China. But, It by no means achieved uniformed results across provinces and villages

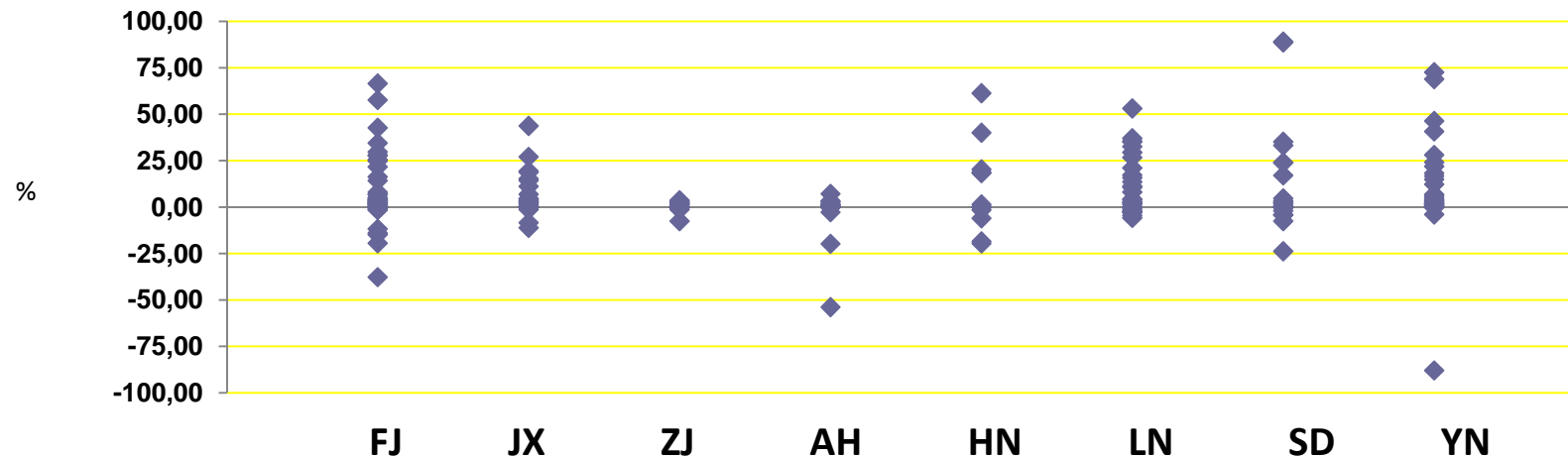


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Variation Across Villages

Share Change in Individual Management (2000-2006)



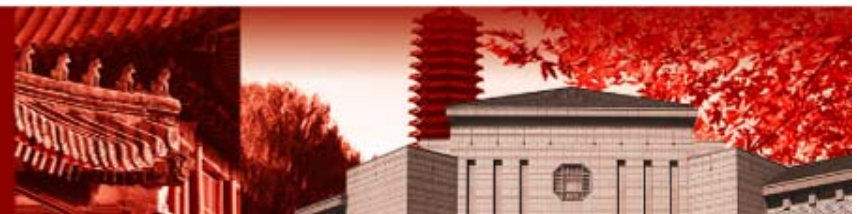
This chart shows direction of share change across all villages in each province. It indicates that while individual tenure is the target type of the reform, its share was increased in many villages and reduced in some others.

Note:

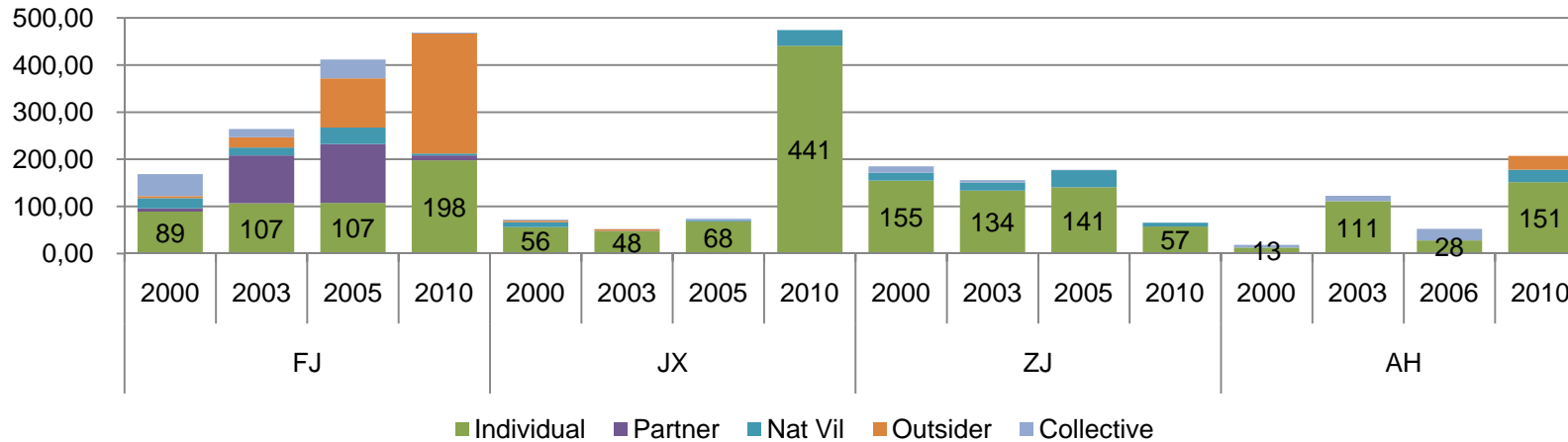
FJ=Fujian, JX=Jiangxi, ZJ=Zhejiang, AH=Anhui, HN=Hunan, LN=Liaoning, SD=Shandong, YN=Yunnan



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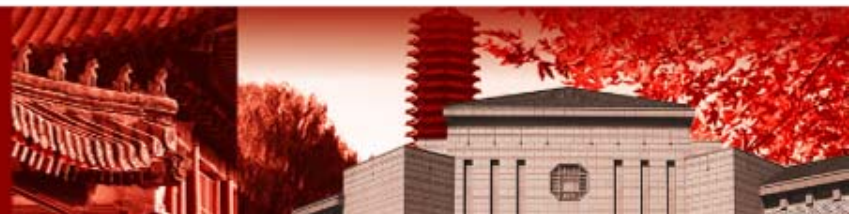
Annual Harvest by Villages (m3)



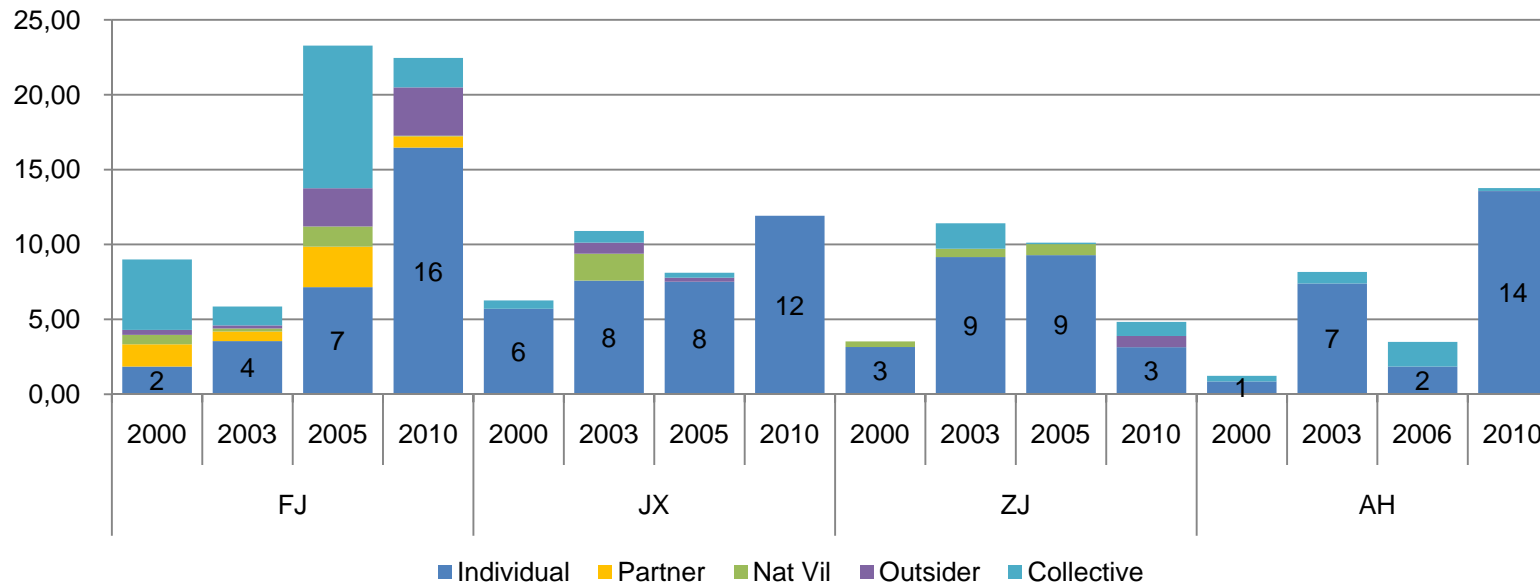
Timber production increased significantly in reform provinces (FJ=Fujian, JX=Jiangxi, ZJ=Zhejiang, AH=Anhui)



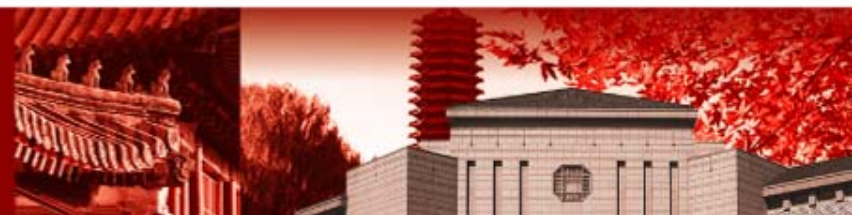
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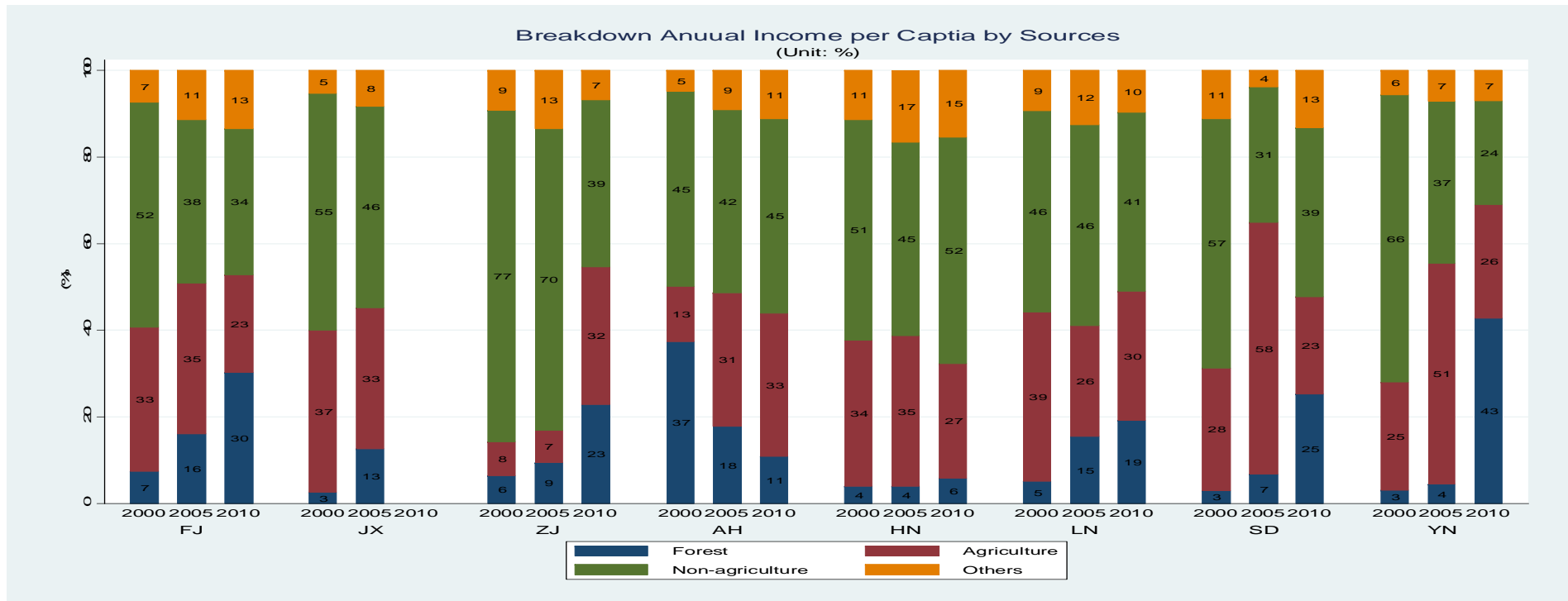
Annual Forestation by Villages (ha)



Forestation has been rising, most in reform provinces



Income Structure Change 2000-2010



While per capita income has been rising across the board, the share of forest income increased in major reform provinces (FJ, JX, ZJ, LN, YN)



Results from Empirical Analyses

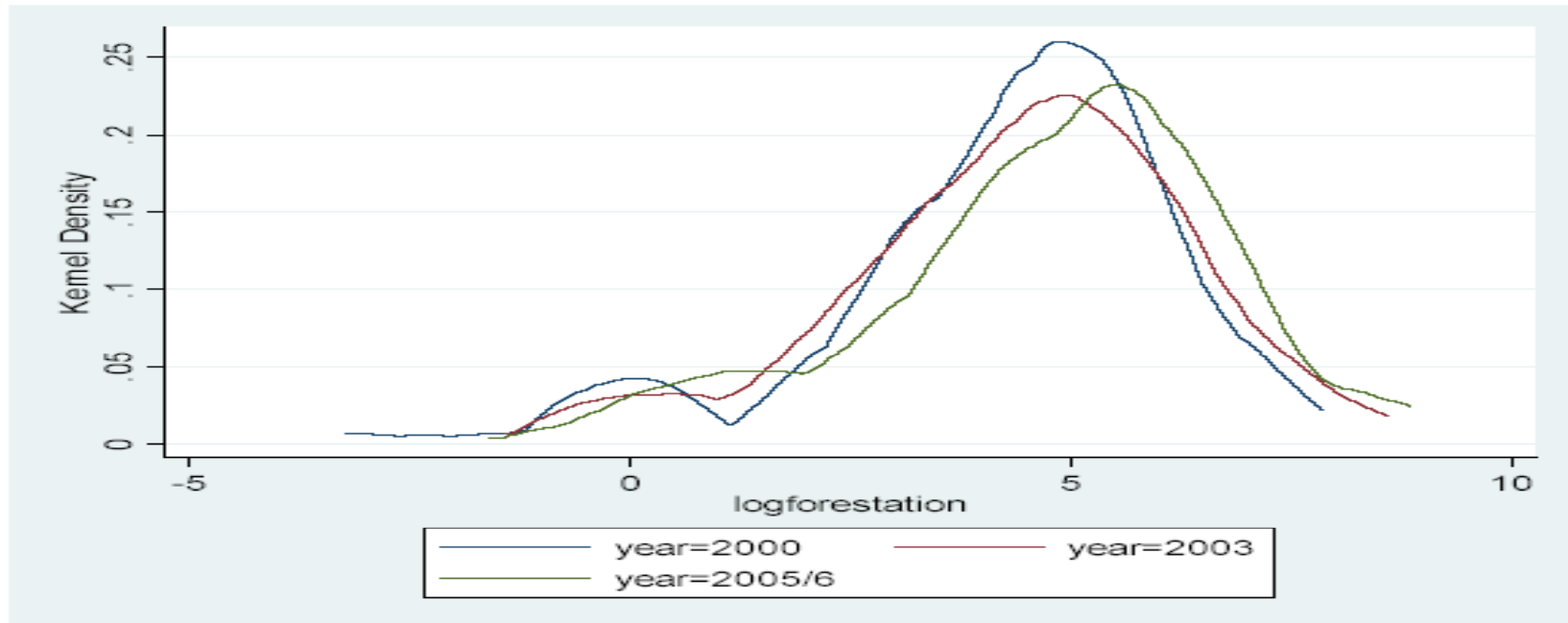
- Tenure Choice
 - (Xu, Deininger, Siikamki, Ji and Hyde, 2013)
 - Tenure reform is a check for accountability of village government
 - Transparency and strong outside monitoring increase individual tenure
 - Strong traditional leadership (e.g. long tenure for leaders) limits reform progress
 - Trade off between rent-seeking and efficiency



Impact on Forestation: Econometric Analysis

Xie, Berck and Xu 2012

Figure 1: Distributions of $\log(\text{Forestation})^*$ in each year



- Central finding is that the reform causes the villages to increase forestation by 17 ha, which is a 150% increase from no reform to reform



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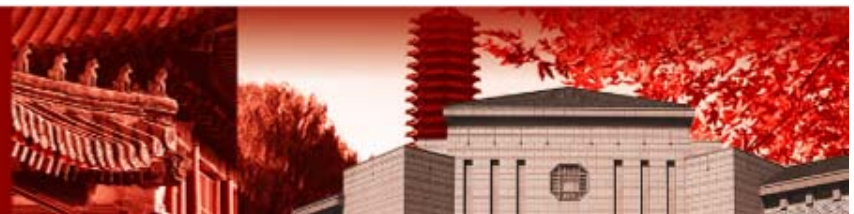
Labor Allocation Decision

(Xu, Deininger, Siikamaki and Ji 2013)

- Safety net effect for better educated farmers
 - They went out more with larger forestland
 - They returned home with crisis and more forestland
- Labor absorbing effect for ordinary farmers
- Enhancing self-employment
 - Reform gives farmer greater ability to borrow and make investment
- Stronger property rights increase labor inputs to forestland
- Indication of relative deprivation
 - People with political connections stayed home with local jobs
 - In contrast with some classic literature



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Remaining Challenges

- Raising forest productivity (to address gap between D_S)
 - Ambitious goal of 40 million ha afforested by 2020, but
 - 2/3 of world average in terms of volume per ha
- Increasing forest contribution to green growth
 - Carbon sequestration (10% industrial emissions and up)
 - Bio-energy (negligible so far)
 - Replacing coal, steel and concrete (reversal of traditional development trend)
 - Stiff learning curve and need for international collaboration
- Modifying constraining forest policies
 - Logging restrictions
 - Shaky protection of property rights
- State forest reform with major obstacles



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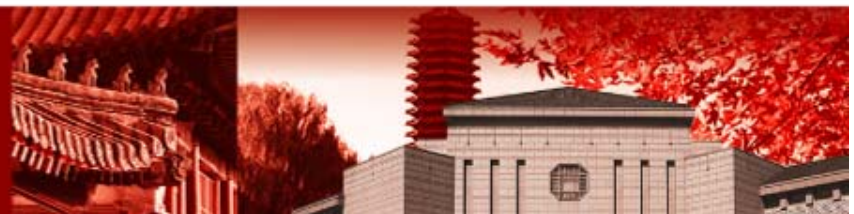


Implications for Other Developing Countries

- Choice between community and individual management is case dependent and dynamic
- Reform in China sets precedents in many ways for developing world
 - Social experiment in individualization
 - A hope for better global resource management
 - Less pressure on tropical forests
 - Better prospect for REDD+
- There is need and opportunity for South-South exchange, learning and sharing



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Thanks !



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