中国贫困与环境问题：改进环境政策实现双赢
Poverty Alleviation and Environment in China: achieving win-win solution by wise policies

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contents

- Overview of China's Poverty and Environment Issues
- Linkage of environ and poverty in China
- Findings of three case studies

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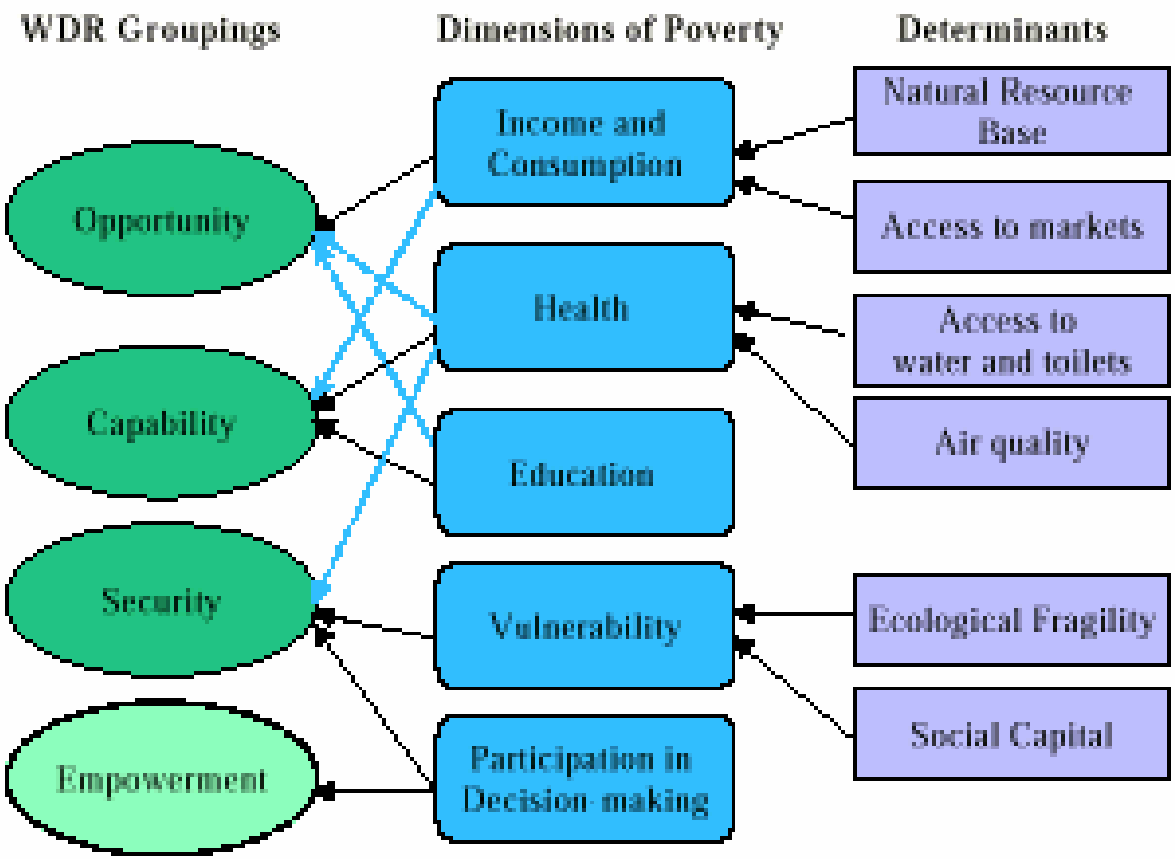
环境与贫困关系
linkage of poverty and environment

Access to resources—potential and capacity for development, capital availability, opportunity, ability , defense, empowerment

Schematic representation of dimensions of poverty



About poverty: what we learned

- Income is just one of the indicator, not all. Multiple dimension of poverty
  - Income, social, cultural, environment and resources
- Poverty is dynamic not static
  - Absolute poverty is just one of the indicator, the relative poverty should give more concern
- Equal Opportunity is more important
- Public services and public good is essential
- Empowerment and real participation is the core and basis

- Education, information, opportunity, security of critical resources, securied rights to env. resources

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Executive Summary

CHINA - Most Important Priorities

Chinese Economy

[1978 to 2000]

Grew at an annual rate of

9.3%

GDP growth **above** 7.0 % **for [at least] next** 15-20 years (2020-2025)

- OPENING of the ECONOMY - WTO
- REDUCTION SOCIAL & ECONOMIC DISPARITIES

CHINA - Most Important Challenges

- Accelerated Growth caused Severe Environmental & Social Imbalances
- Adjustments require Comprehensive Efforts to combine Economic, Social & Environmental (incl. Energy) concerns.

Reconciling economic growth and environmental quality resources bases (natural capital): how to narrow the income gap, poverty alleviation, urbanization

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Current China: separation of social structure, emerging of interest groups, increasing of conflicts
社会结构分化、利益集团形成、利益冲突加剧

- China's economy enjoy high growth rate
  - Uneven development situation by implementing giving top priority to develop coalstal areas
  - 以沿海地区优先发展为重点的非均衡发展形势
  - The gap between east and west

"生存性环境权益" 之间及其与"生产和发展性环境权益"之间以及不同权益主体的"生产和发展性环境权益"之间的冲突

Conflicts between the "environmental rights for survival" and environmental rights for production and development; the conflicts among interest groups regarding the environ. Rights for production and development

的最严重的社会问题之一

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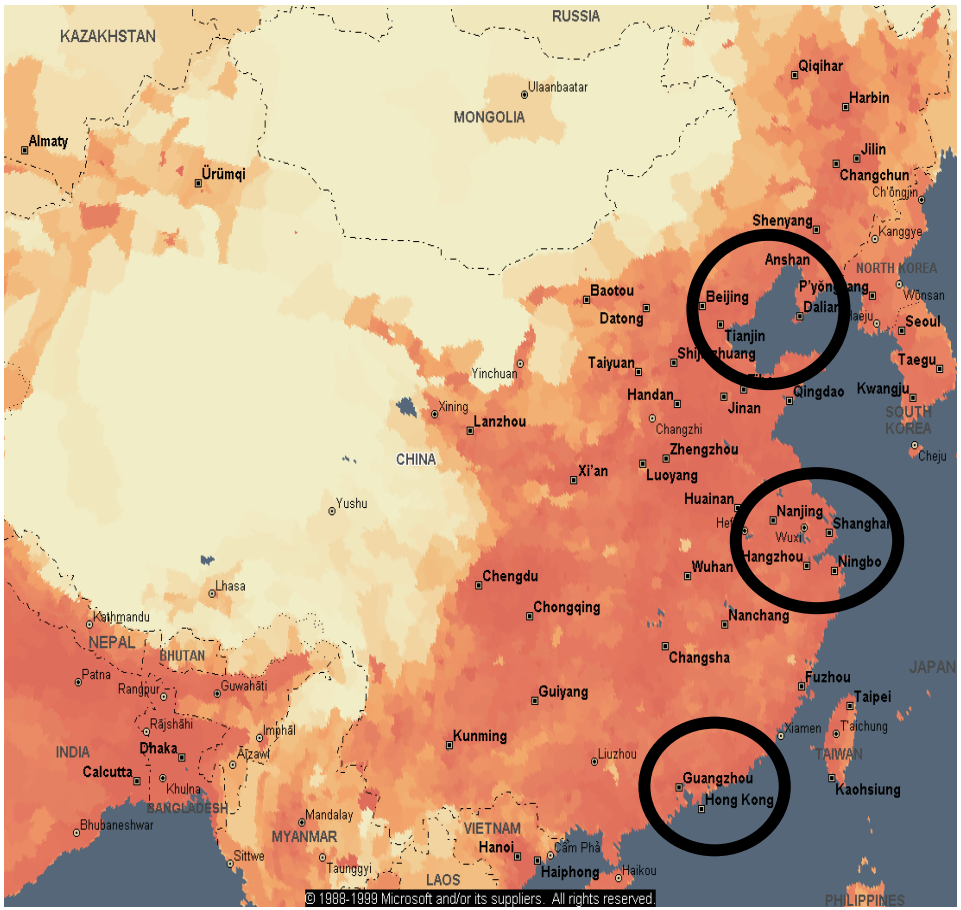
China

uneven geo-morphological conditions and economic development



(i) 3% of Land Mass;
(290,000 Km^2)

(ii) 20% of population;
(260 million people)

(iii) 45% of GDP;
(US$ 650 billion)

(iv) 70% of all international trade & investments
(US$ 560 billion)
&
(US$ 420 billion)

Source: **NDRC;**

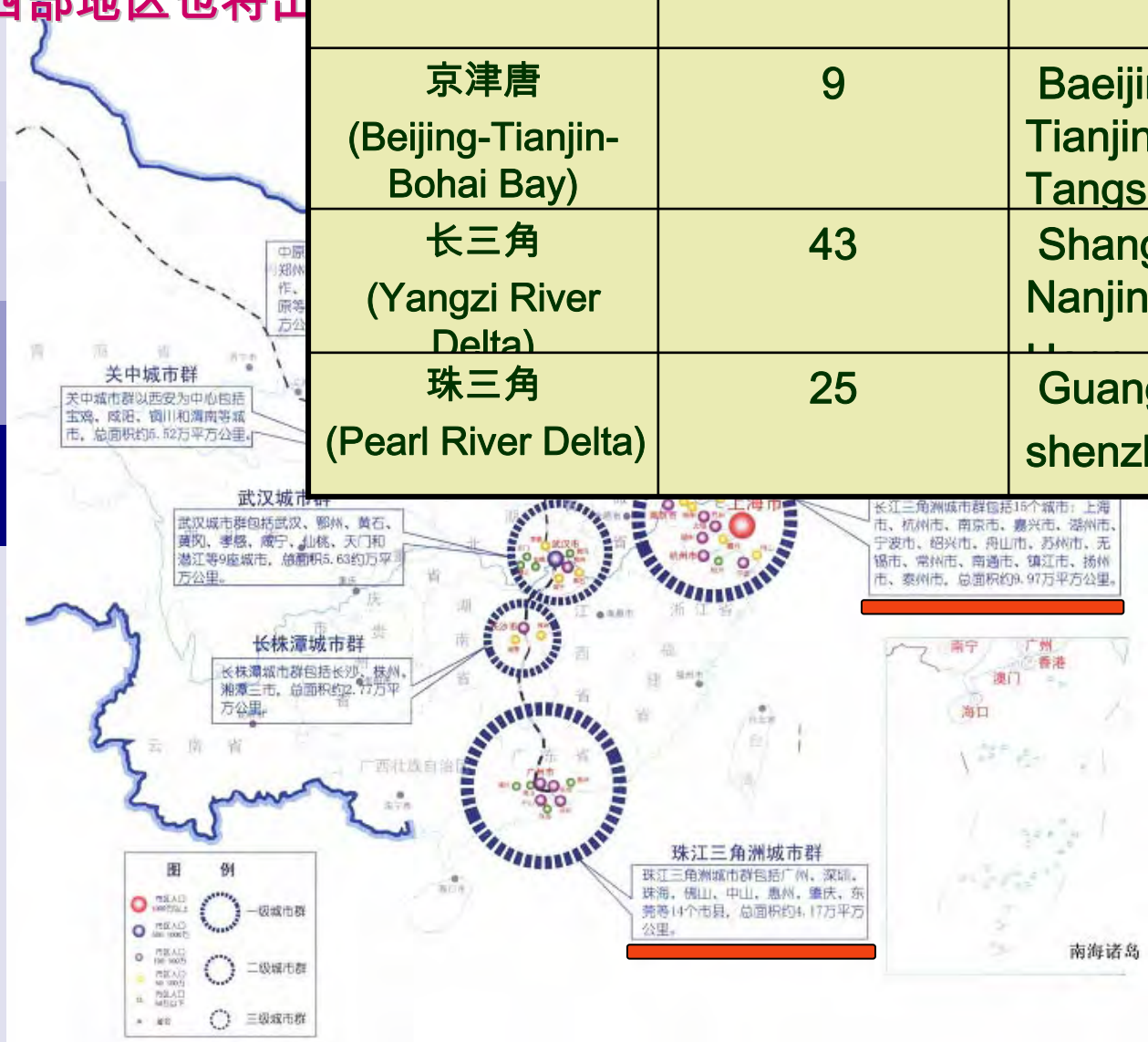
我国高速城市化的一个重要特点—city cluster

大、中、小城市通过交通网、资源网和社会经济紧密相连

在东部经济发达地区已

在中、西部地区也将出

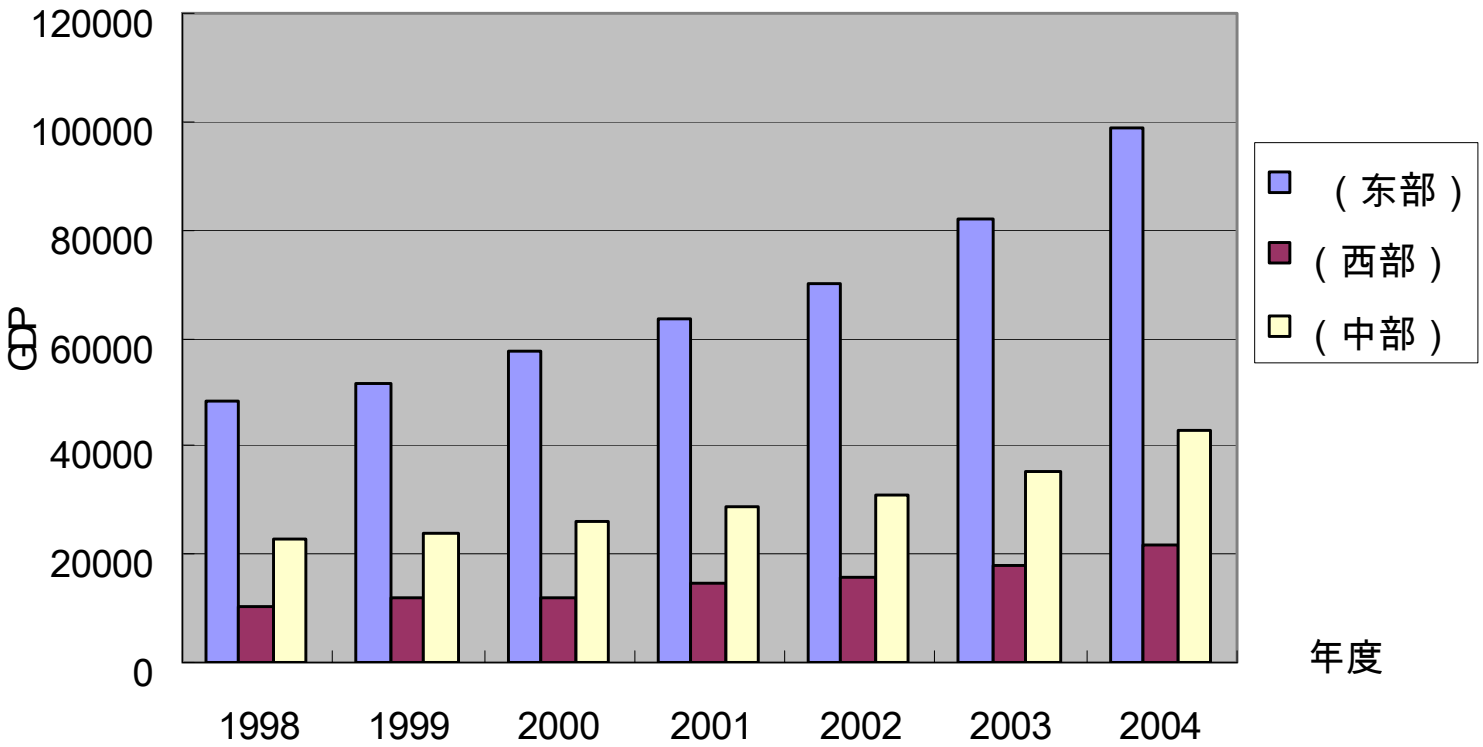
City clusters	Num. Of cities	Mega-cities
京津唐 (Beijing-Tianjin-Bohai Bay)	9	Baeijing, Tianjin, Tangshan
长三角 (Yangzi River Delta)	43	Shanghai, Nanjing,
珠三角 (Pearl River Delta)	25	Guangzhou, shenzhen



GDP of eastern, central and western China

52.5%, 29.70%, 17.80% in 1978

59.00%. 26.50%. 14.50% in 1995



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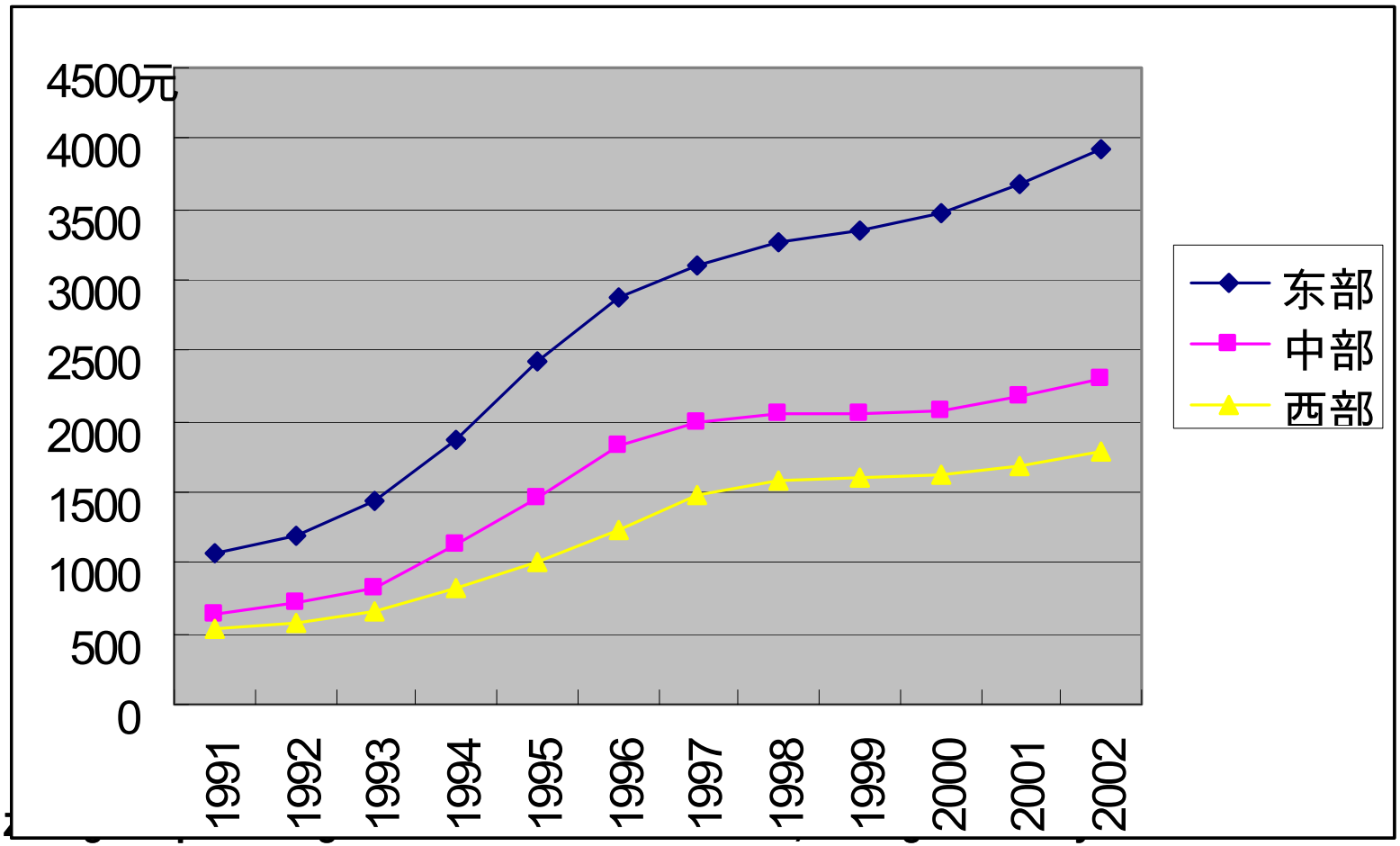
Per capita income of farmers in east, central and west

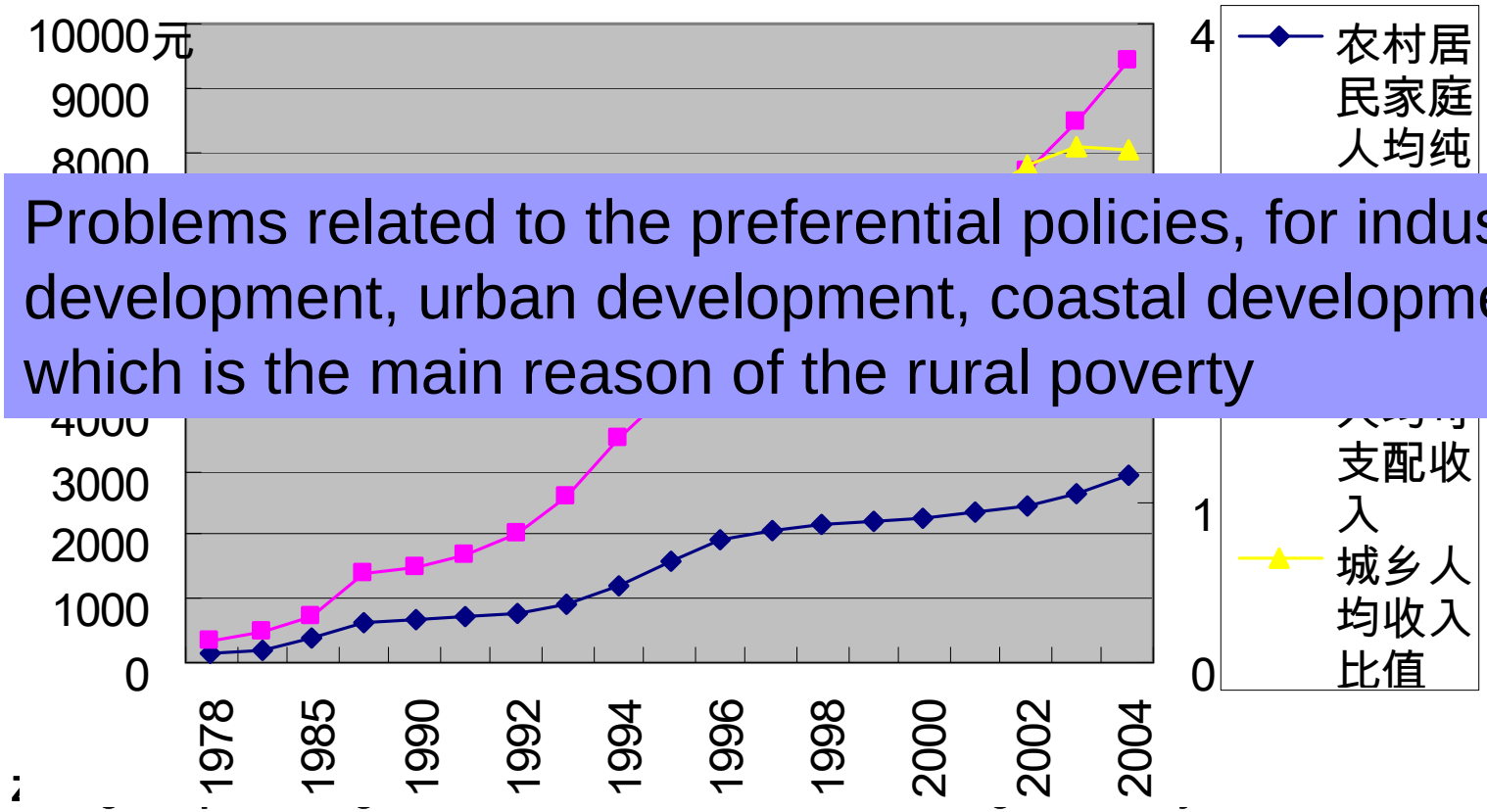


Uneven development between rural and urban

during 1978～1985, the income gap decreased,

since 1986, it increased, with the ratio of 2.86, to 2003, 2004 is around 3.2,

while other countries usually less than 1.6

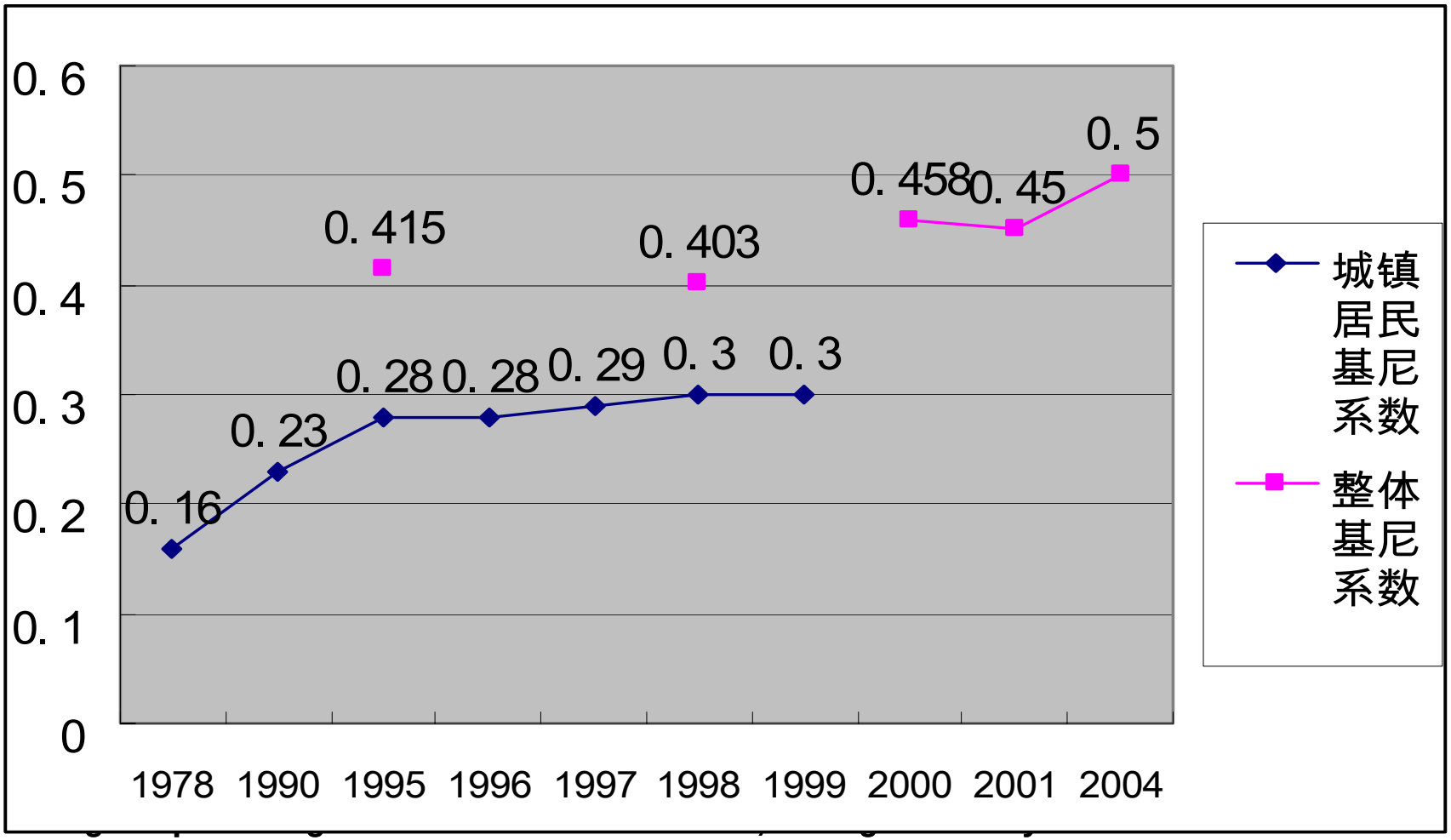


Problems related to the preferential policies, for industry development, urban development, coastal development, which is the main reason of the rural poverty

Gini co-efficient

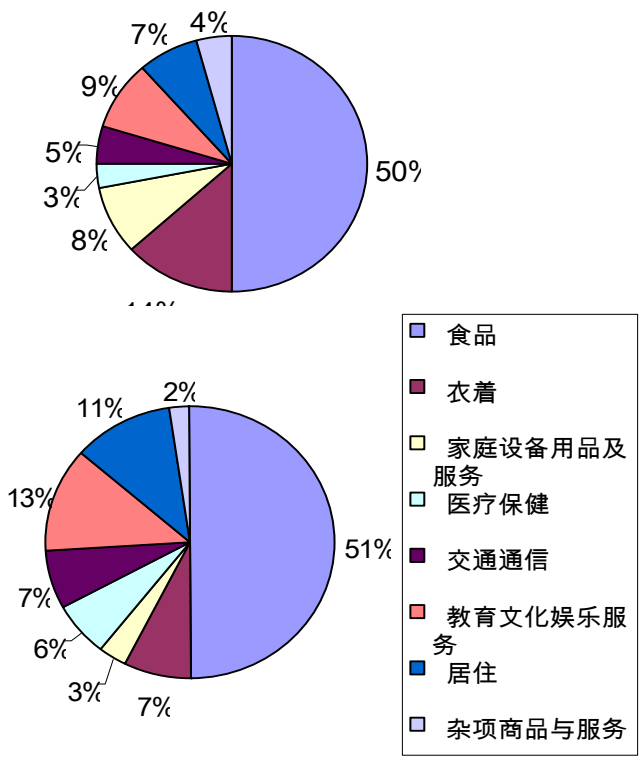
from 0.16 of late 1970s, to 0.46 or 0.5 in 2004

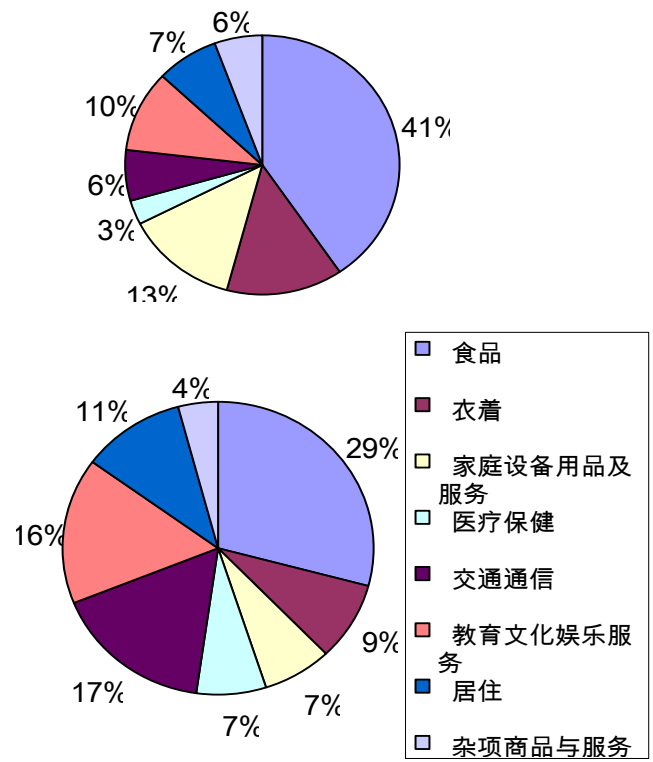
rural: 0.37, urban 0.34



Consumption structure of urban income groups, 1995-2004

- Lowest income group
- Highest income group





经济社会二元化导致的生态环境二元化趋势

duality of economy and society and its implication on ecological environment

- Natural resources and environmental capacity has continued being the major contribution of economic growth
- 自然和环境资源依然是现行经济增长的主要贡献者：产业结构、不同资本的贡献率
- Uneven distribution
  - 区域发展不平衡 regional
  - 产业发展不平衡 industrial
  - 社会群体发展不平衡 social groups
  - 城市农村发展不平衡 urban and rural
- Pollution transfer east to west, rich to poor, urban to rural, developed to developing and undeveloped

Reconciling economic growth and environmental quality resources bases (natural capital): how to narrow the income gap, poverty alleviation, urbanization

Balancing the efficiency and equity, not just economy, income, but all capitals

Major Concerns of environment in the current stage

- The most severe situation of environmental pollution is projected to last at least 15 years
- Environmental pollution accident is in a high frequency
  - Environmental risks and environmental security
- Conflicts of social groups is increasing
  - Social stabilization

Implications of the environment situation changes of pollution, eco system, and resources bases

- Complexity of pollution and pollutants
  - 污染物类型与形式
- Damage of environmental damages and resources depletion—increase even env. Quality improved, poor's access to basic resources is constrained
  - 污染损害特征：物的到福利的
- Polluters, and users changed: separation of user, beneficiary, victim, polluter and those improve the environ. Quality
  - 污染责任者: 使用者、受益者、破坏者、改善者分离
- Increase of the areas of pollution
  - 污染范围与转移
- Conflicts of the local based env. Management scheme v.s the trans-boundary and trans basin pollution
  - 跨流域、跨界问题与属地管理模式的矛盾
- Globalization
  - 全球环境问题：全球化特征与全球化问题：环境问题的全球化特征 ：贸易引致、全球问题、贸易壁垒

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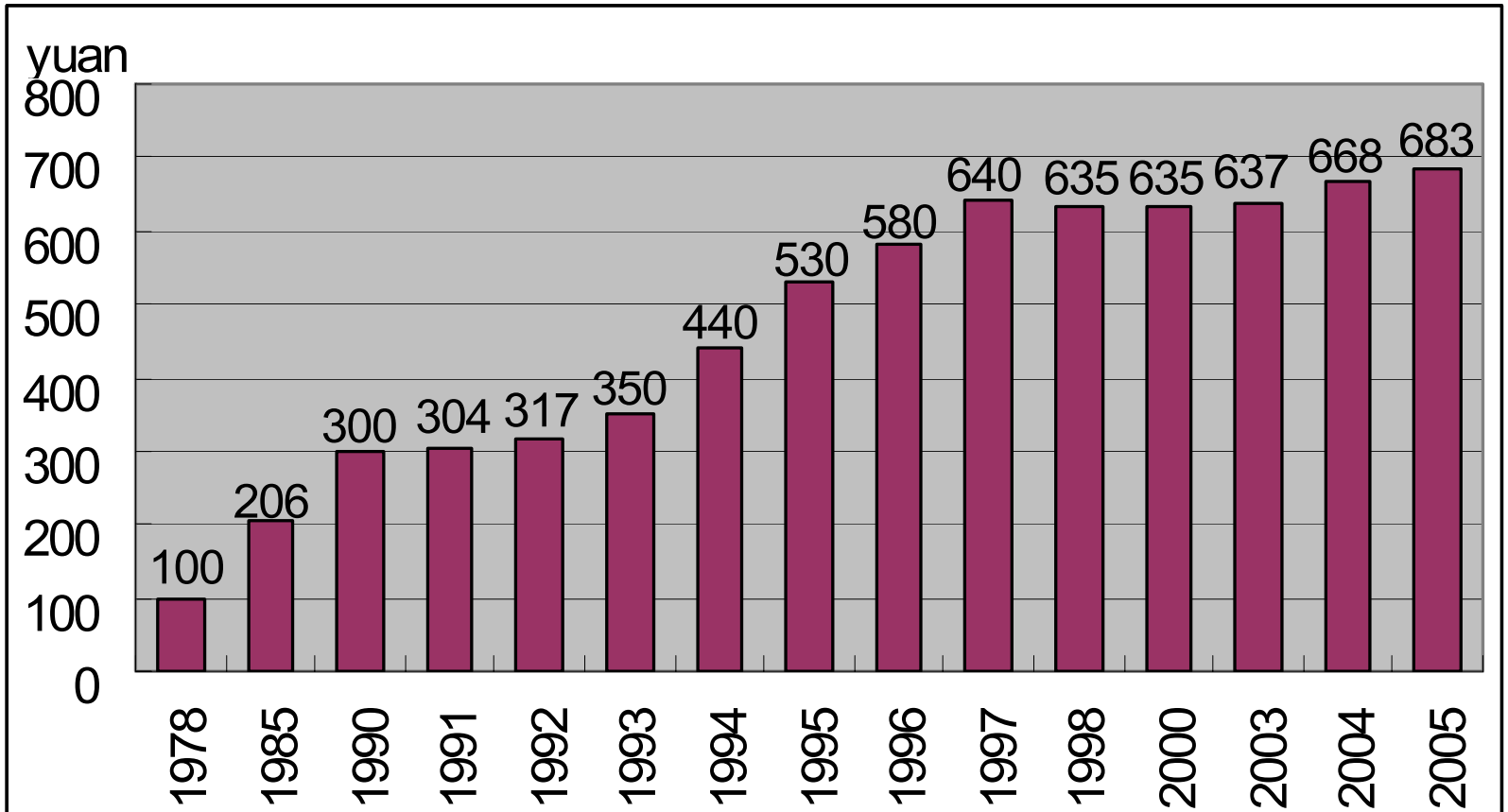
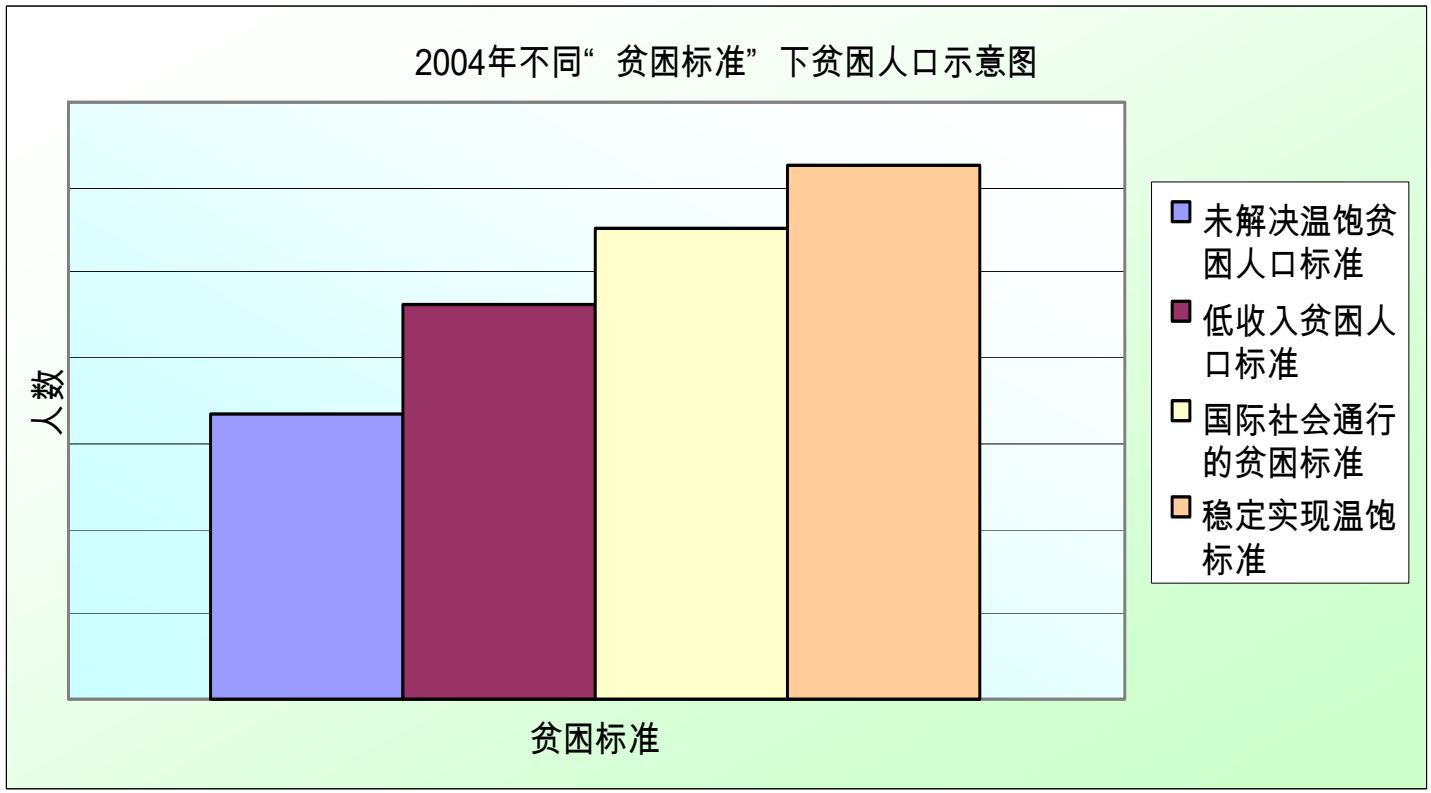
Progress and challenges ahead

About poverty line



农村贫困线标准的变化(人均纯收入)

Comparison of various poverty line



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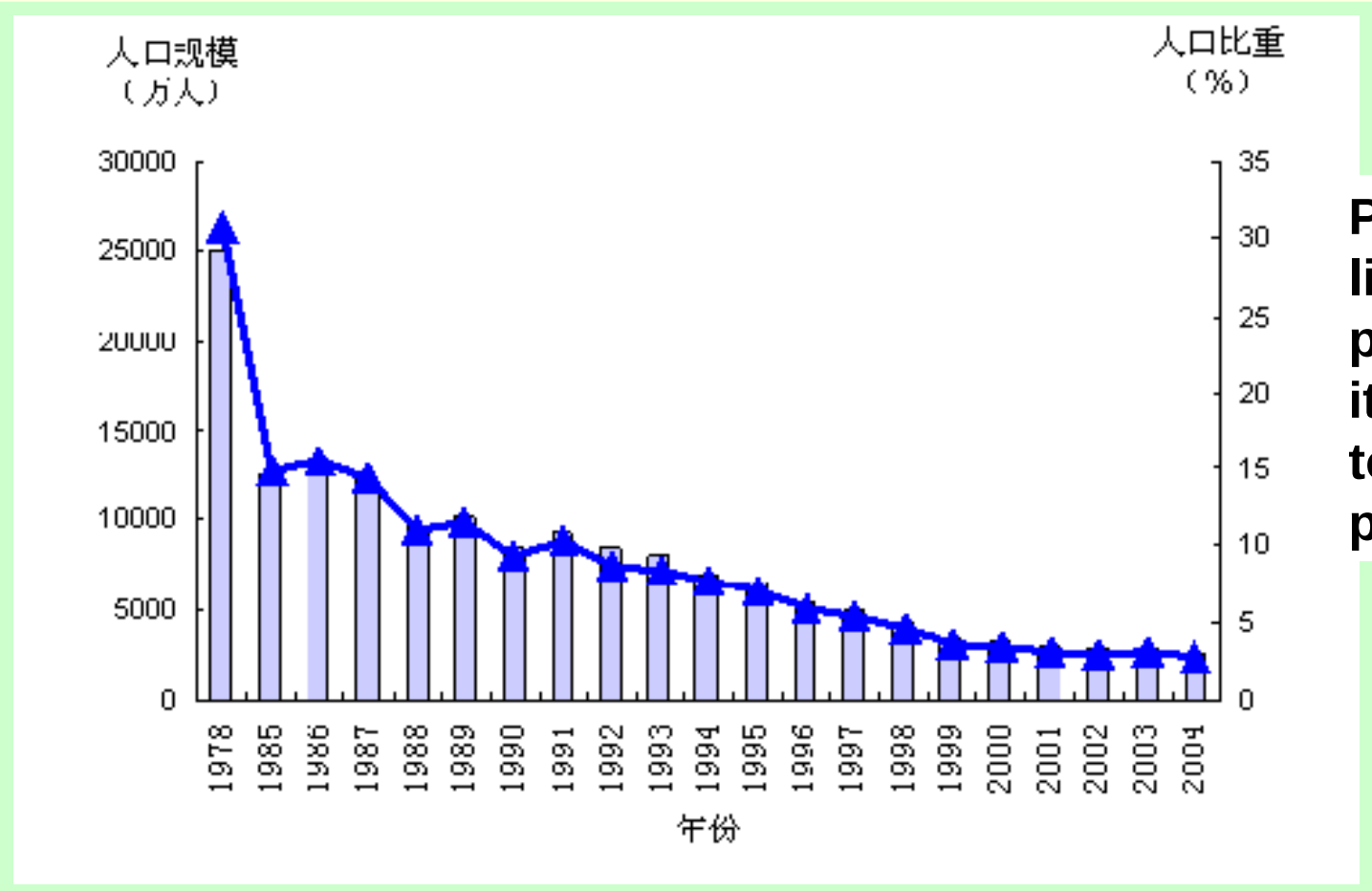
贫困人口数量下降
poverty population decreased

0.25 billion in 1978, to 42 million in 1998, 29 million in 2003 ; 23.65 in 2004
Poverty incidence decreased from 30.7% to 3%



Population living in poverty and its proportion to rural population

联合国的国际贫困标准
每人每天收入或消费不低于一美元
全国贫困人口不少于2亿人
中国的贫困标准
人均年收入不低于人民币683元
农村贫困人口2365万人
chsphoto
中国贫困人口位列世界第二(2005年)

当前和未来减贫工作面临更大挑战：减贫和扶贫难度加大
challenges of poverty alleviation

- 贫困人口特征 features of the poor population
  - Poor population and poor region: income, environ. Social capital, and cultural
    - 贫困人群与贫困地区：收入贫困、环境贫困、社会贫困与文化贫困交织
  - Poor living situation, +, lower potential for development under current institutional arrangement
    - 经济发展水平低, 生活条件较差, 自然条件差
  - Poor social capitals: infrastructure, social capital, market, social activities, information
    - 社会发育程度低、基础设施薄弱、社会资本严重缺乏：交通、文化、市场发育程度、社会活动封闭（信息）
  - Population growth vs low education level
    - 人口增长、受教育程度
  - Heavily rely on resources and other agents
    - 经济关系的依附性

challenges of poverty alleviation constraints of the poor's development

- **Institutions ensure and improve the capacity of ability of poor is most important factors**
  - 贫困群体的自我发展能力及相应的制度保障，是影响中国能否有效实现减贫目标、巩固减贫和扶贫效果、实现社会公平、公正和和谐发展的核心与关键
- **Return to poverty, 15.4 million in 2003**
  - 贫困人口数量下降，但下降速度减缓，甚至出现返贫现象。 1540万
- **Distribution of the absolute poverty**
  - 中国农村贫困人口大部分分布具有明显的边缘性，难以为发达地区经济辐射力驱动，资源基础和生产条件恶劣。
- **Constrains of market situation and constrains for emerging material capital and development potentials by even rich natural resources– conflicts of conservation and development**
  - 条件性约束，使得资源资本难以形成物质资本和发展资本，贫困地区面临开发和资源保护以及生态平衡的两难处境

中国贫困人口的分布
distribution of poverty population

- Ecological vulnerable areas 分布具有明显的边缘性，即分布在西部、西部与中部、中部与东部的过渡带或边缘地带，还有一部分居住在中国与外国的周边地带，这些地带的生态环境十分脆弱。
  - 中部山地高原环境脆弱贫困带
  - 西部沙漠高寒山原环境恶劣贫困区
  - 东部平原山丘环境危急及革命根据地孤岛型贫困区

- Far from central cities远离中心城市，无法得到发达地区“涓滴效应” 的好处；
- Far from transportation lines 远离交通干线、很难与外界社会交往，很难获得利用市场机遇的信息
- Close society 贫困地区就只得在一个无法利用外部经济性的封闭的恶劣环境进行生产，同一产品的成本大于外界的一两倍，而边际成本大于边际收益的非理性行为也时常出现。

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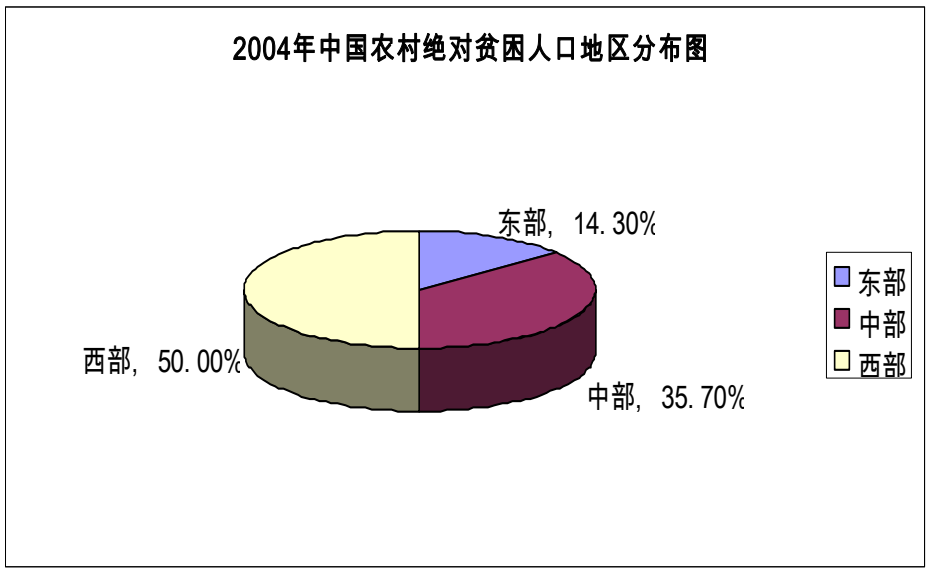
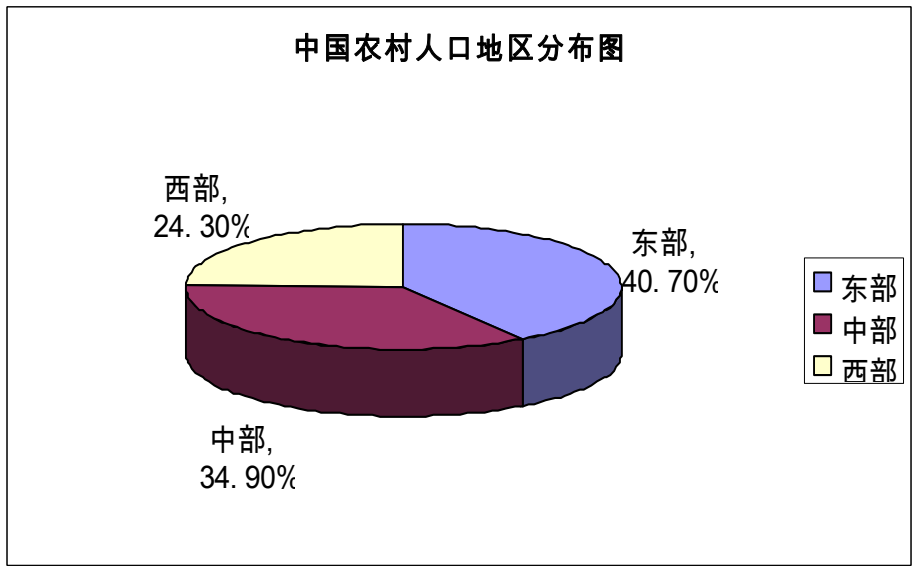
Locations of poverty counties

图 3.7 中国脆弱生态环境分布

Regional distributions of rural poverty





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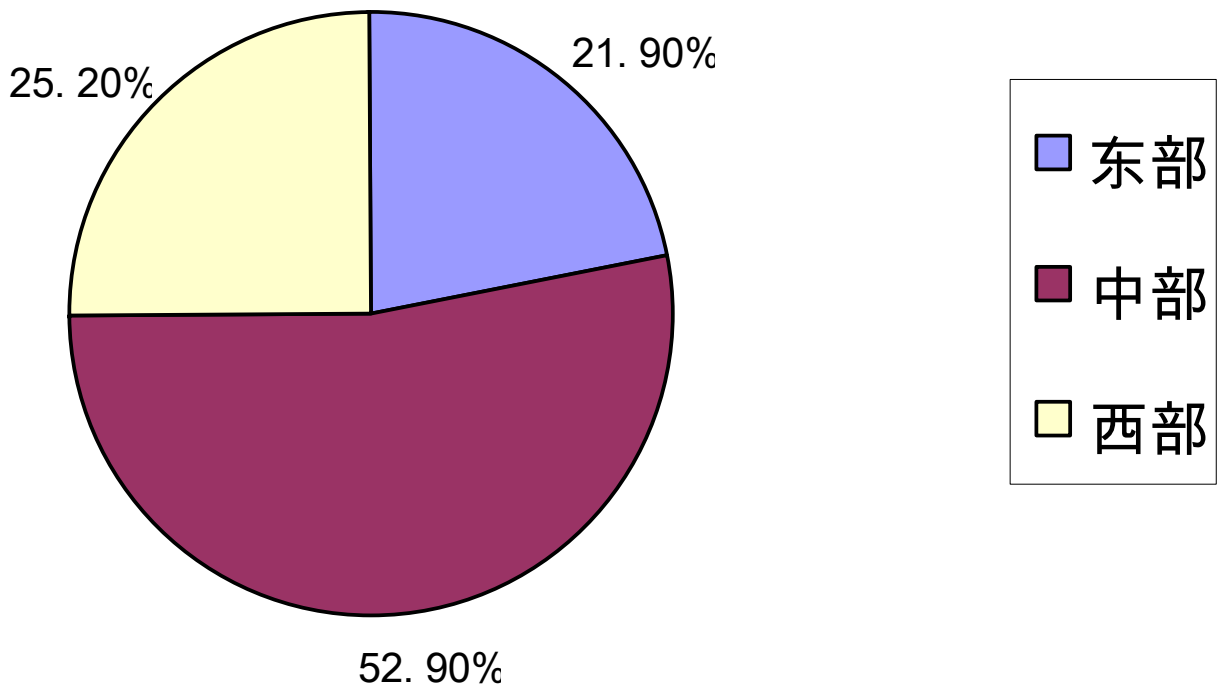
Urban poverty



城镇贫困人口在东中西部的分布

贫困人口分布特征
distribution of the population in poverty

- 农村与城市：农村发展
  - Rural vs urban
- 区域分布特征：自然资本对贫困人口的重要性、
  - Regional distribution, and importance of the natural capital
- 贫富收入差距日渐扩大；

Different category of poverty has different implications for causes and action needed

资源丰富地区和资源贫瘠地区

农村与城镇贫困问题存在的根源 causes for rural poverty

- 农村贫困问题 - - rural poverty
  - Poor natural conditions
  - Poor social and market conditions: green poverty
  - Population growth and low efficiency of resources uses

causes for urban

- Poor social conditions and public goods and services
- Marginalized of urban poor

中国贫困与环境问题的主要原因识别 summary of the causes

贫困类型	理论依据	发展模式	贫困与环境的关系
绝对贫困	人口决定论	人口超载→ 地力衰竭	贫困导致环境恶化
绝对贫困	地理决定论	自然资源贫乏→ 生产	环境恶化导致贫困
相对贫困	经济决定论	经济增长缓慢→ 低收入低投入低治理	贫困导致环境恶化
相对贫困	成本决定论	比较成本→ 重开发轻治理	贫困导致环境恶化
乡村贫困	历史决定论	历史性环境恶化→ 历史性贫困	环境恶化导致贫困
乡村贫困	技术决定论	低技术粗放经营→ 水土流失环境破坏	贫困导致环境恶化
城市贫困	行为决定论	贫民窟环境→ 贫困化行为	环境恶化导致贫困

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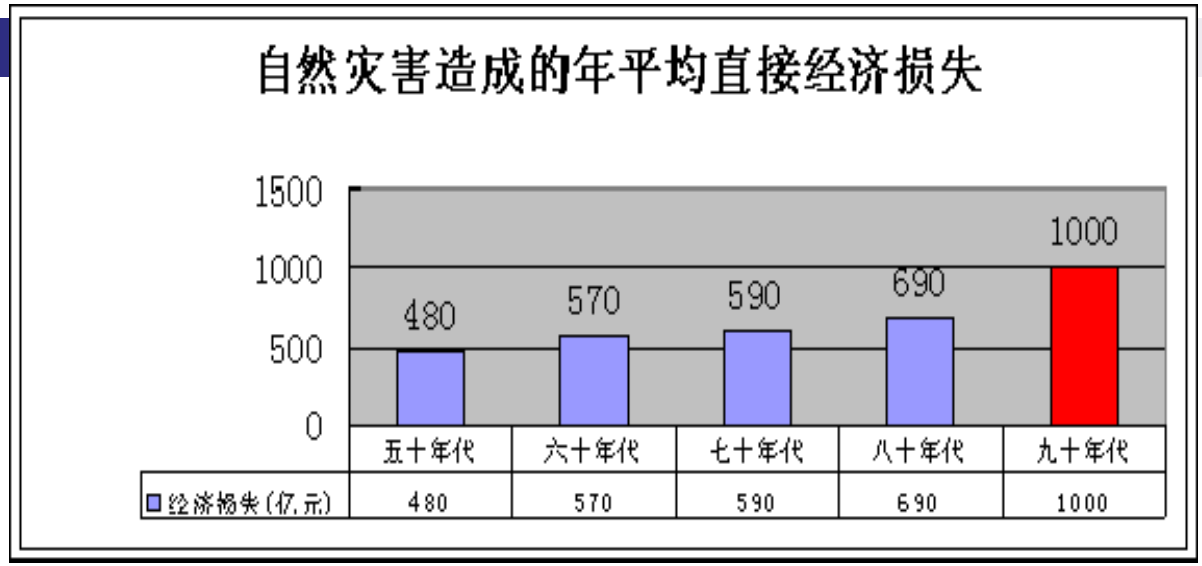
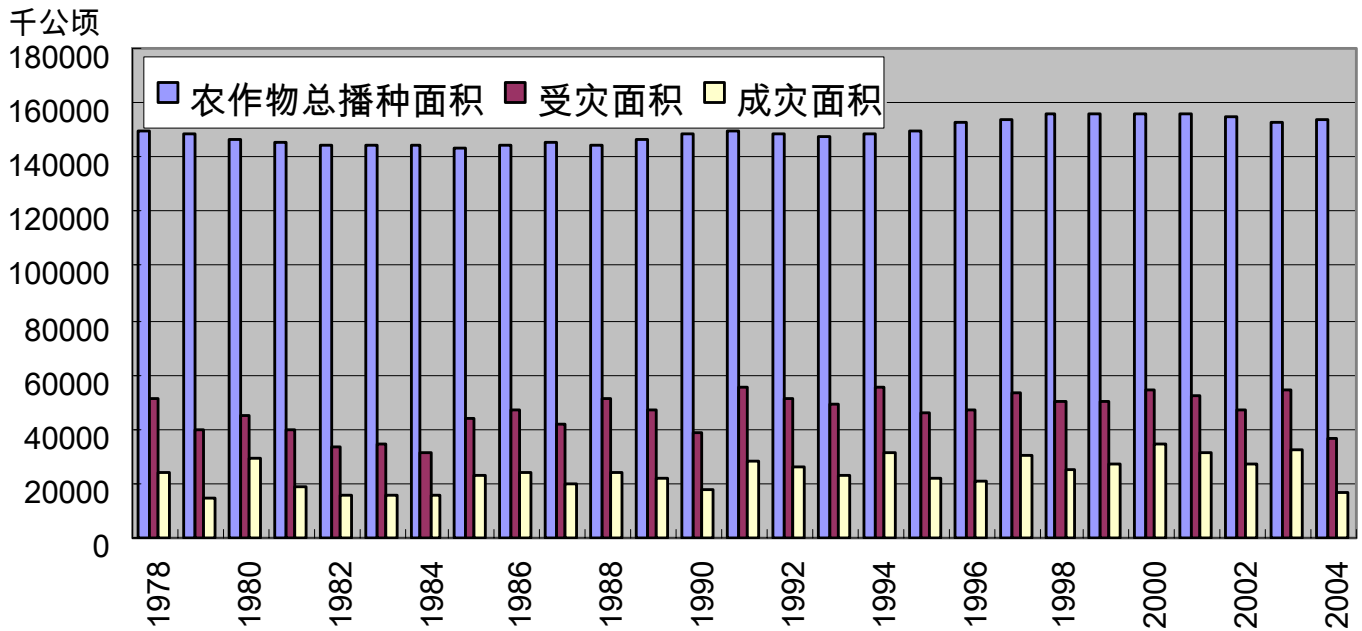
- Poor being affected most by environmental degradation, they may not the biggest beneficiaries of environmental improvement
  - About 0.3 billion of rural people have no safe water access
  - Poor affected more by natural disasters
  - Impact of TVIEs
  - Impact of use of chemicals
  - Impact of industrial development
  - Impacts of pollution transfer


自然灾害造成的年平均直接经济损失
1500
1000
500
0
480
570
590
690
1000
五十年代
六十年代
七十年代
八十年代
九十年代
经济损失(亿元)
480
570
590
690
1000


千公顷
180000
160000
140000
120000
100000
80000
60000
40000
20000
0
农作物总播种面积
受灾面积
成灾面积
1978
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004

(Desertification) 0.4 billion are affected

China:
1.3 **million Km²**
(7.0% **World Arable Land**)

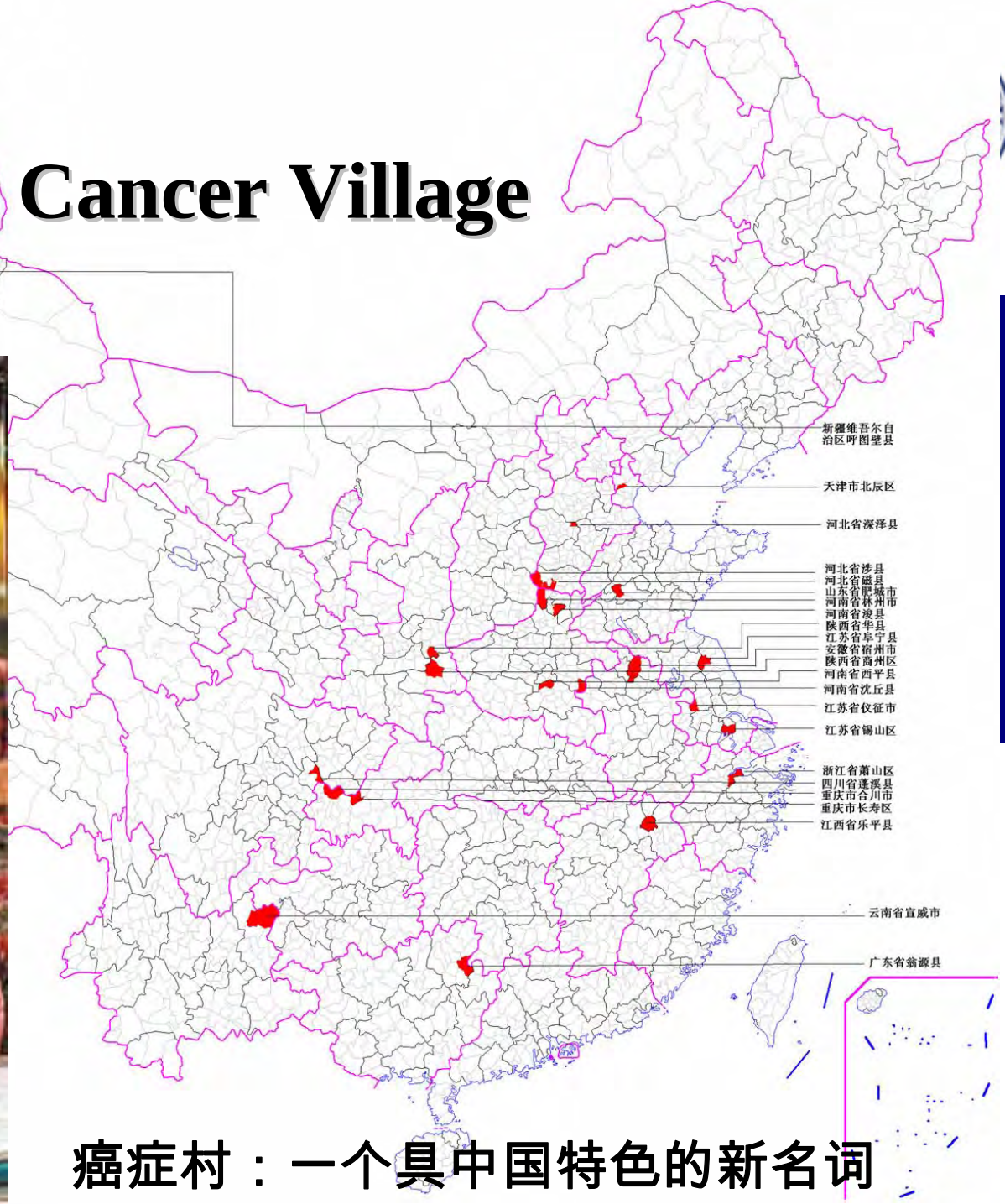
(Annual Grain **Prod.):**
>500 **million tonnes**(1)
(Feeds 20% **- World Pop.)**

Yellow River **(irrigation):**
1950: 800 thousand ha;
2003: 7.3 million ha

Source: **SEPA (WANG Yuqing), 2003; Yellow River Water Resources Committee (HONG, Shangchi); (1) Grain production reached a maximum of 512 million tonnes (1998) and a minimum of 435 million tonnes in 2003 (Ministry of Agriculture); UNIDO Analysis**

中国有癌症村报道的县市区

Cancer Village



癌症村：一个具中国特色的新名词

Poverty and Environment in China: why we need wise policy?

- Key issues for China: how to equally benefits to social groups from the economic development,

  •The distribution of benefits from natural resource and environment-related policies can be crucial to the lives and livings of the poor

- •Contributions of poor to resources conservation should be reflected, and user cost and damage caused by resources utilization and env. Capacity should be reflect

  • external cost, resources depletion cost

  • avoid the advantage group to take too much from failure env. And resources management

  •Avoid low efficient of use of resources and environment

China's policymaking concerns its management of the environment and its natural resource base

- Chinese policy concerning the environment is crucial for the purpose of ensuring that the users of the environment pay the full marginal costs of their uses.
- Another crucial aspect of environmental policy making concerns the identity of those persons receiving the benefits from policies concerning the environment and the resource base.

- **Distribution of benefits from the natural resources and environmental policy being crucial to the lives and livings of poor**
  自然资源和环境相关政策的利益分配对于贫困人口的生存和生活至关重要

- The poor are distinguished by the fact that their lives are often closely linked to the resource base
- They are also distinguished by the fact that their incomes often are very close to subsistence levels.
- Finally, they are distinguished by the fact that

Question: improve the capacity of the poor to gain sustainable income: household capital, natural resources, social and economic conditions获取可持续收入的能力：家庭资本存量、自然条件、社会经济条件

Distribution effects of pricing resources 资源定价的分配影响

•Economist believes that the critical issue for environmental policy is to ensure that the agent to use natural resources efficiently

•the pricing of a resource is developed around the concept of marginal social costs to the users of that resource
•一种方法是确保资源使用者支付其利用资源的完全边际社会成本。然而，
•However, some conflicts existed: When such a price is put into effect, it may have the desired effect of deterring inefficient resource use at the margin, but it may also have infra-marginal effects on those with extremely low income or wealth levels.
•由于多种原因，效率的追求通常与对公平和平等的普遍理解是相冲突的，并且与减缓贫困的诉求也是矛盾的。

重大相关问题：
key issues findings of the poverty related studies

- Policies of environment do have impacts on income groups, some achievements can be made
  - Urban water
  - Irrigation water
- Eco services payment is important to give recognition of poor to eco conservation
  - SLCP
  - NFPP

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collaborative work

- Peking University
  - Zhang Shiqiu, and environmental economics study groups
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The Income Related Incidence of Water Pricing in Beijing: Uniform LRMC vs Increasing Block Tariffs

The Income Related Incidence of Water Pricing in Beijing:
Uniform LRMC vs Increasing Block Tariffs

1. Evaluate the responses to water pricing in Beijing
   - Estimate demand function for water
   - Obtain income elasticity of demand (IED) and price elasticity of demand (PED)
2. Obtain the parameters for different income groups
   - Income quintiles
3. Policy simulation:
   - Assess impact of pricing on income groups:
   - Compare IBT to the uniform tariff of 4.5RMB
4. Policy recommendations

月度用水和年度用水 - - 综列数据和时间序列数据

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Method

- We use an Almost Ideal Demand System (AIDS) approach to estimate demand for water
- We estimate PED and IED for the income quintile groups
- Exact welfare comparisons are made for income quintiles for different pricing policies:
  - **Equivalent variation**
  - **Deadweight losses**
- The equity benefits are discussed in light of the literature on IBTs and the numerous problems that they introduce.

Year	Residential Water	Residential Waste Water	Water Tariff Total	Consumer Price Index	Real Tariff (2000 Prices)	Marginal Supply Cost	Estimated Effective Subsidy
2003	2.3	0.6	2.9	-	-	-	-
2002	2.0	0.5	2.5	107.22	2.33	5.60	3.27
2001	1.6	0.4	2.0	103.10	1.94	4.85	2.91
2000	1.3	0.3	1.6	100.00	1.60	2.00	0.40
1999	1.0	0.1	1.1	96.62	1.14	1.37	0.23
1998	1.0	0.1	1.1	96.04	1.15	1.37	0.22
1997	0.5	0	0.5	93.79	0.53	1.41	0.88
1996	0.3	0	0.3	89.07	0.34	0.47	0.13
1995	0.3	0	0.3	79.81	0.38	0.53	0.15
1994	0.3	0	0.3	68.04	0.44	0.62	0.18
1993	0.3	0	0.3	54.48	0.55	0.77	0.22
1992	0.3	0	0.3	45.78	0.66	0.92	0.26
1991	0.12	0	0.12	41.65	0.29	1.01	0.72
1990	0.12	0	0.12	37.22	0.32	1.13	0.81
1989	0.12	0	0.12	35.32	0.34	0.55	0.21
1988	0.12	0	0.12	30.13	0.40	0.58	0.18
1987	0.12	0	0.12	25.03	0.48	0.60	0.12
1986	0.12	0	0.12	23.05	0.52	0.54	0.02
1985	0.12	0	0.12	21.58	0.56	0.43	-0.13
1984	0.12	0	0.12	18.36	0.65	-	-

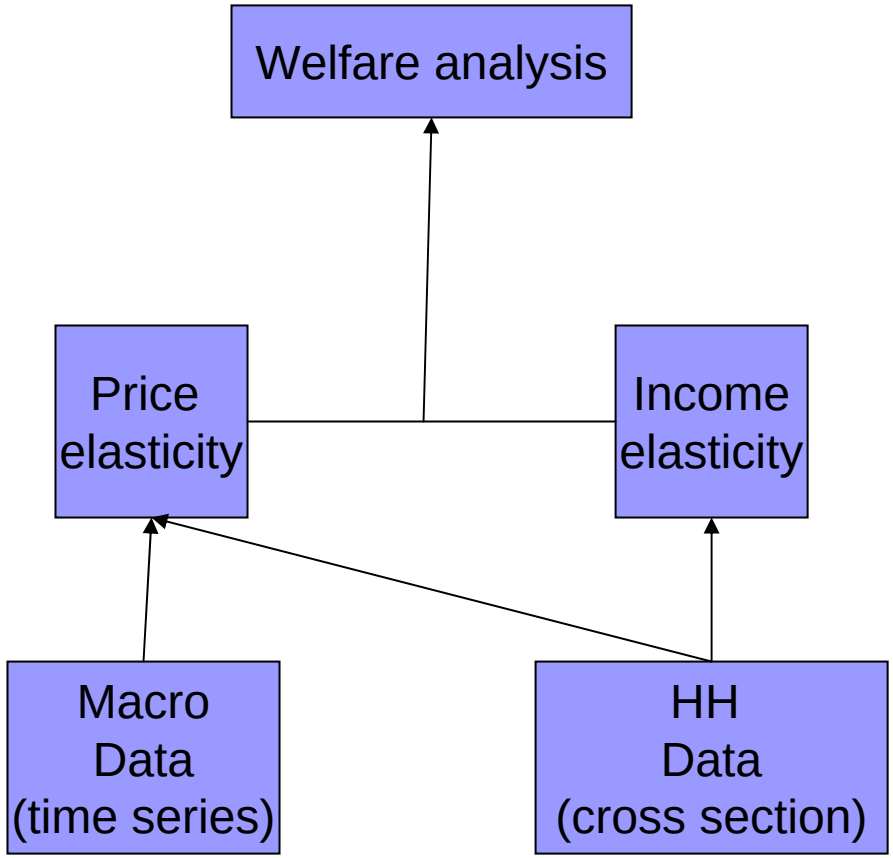
Data (2)

2. Household Level Monthly data

District Code	Household Code	Month	Expenditure on Consumption	Other Expenditure	Water, Electricity Fuel and others	Water, Quantity	Water, Sum
110101	0001	1	6235.40	5613.00	1035.00	102.20	255.00
110101	0001	2	12461.40	10605.00	0.00	0.00	0.00
110101	0001	3	3461.40	2928.00	0.00	0.00	0.00
110101	0001	4	4422.40	3296.50	0.00	0.00	0.00
110101	0001	5	1125.60	430.80	0.00	0.00	0.00
110101	0001	6	1236.10	764.50	0.00	0.00	0.00
110101	0001	7	1382.20	1070.80	0.00	0.00	0.00
110101	0001	8	1306.40	939.20	0.00	0.00	0.00
110101	0001	9	2293.90	1619.40	0.00	0.00	0.00
110101	0001	10	2236.70	1528.50	0.00	0.00	0.00
110101	0001	11	1694.00	1211.40	0.00	0.00	0.00
110101	0001	12	1656.70	1295.50	0.00	0.00	0.00
110101	0002	1	3718.04	2828.50	557.00	46.80	117.00
110101	0002	2	2253.85	1626.95	0.00	0.00	0.00
110101	0002	3	4638.50	3921.00	0.00	0.00	0.00
110101	0002	4	1385.85	579.65	0.00	0.00	0.00

Econometrics Models

- Cross data
- Time series



Summary of Results

- The IBT does transfer some income across income groups and the low income groups would prefer this system to a uniform tariff of 4.5RMB
- The richer households would prefer the uniform tariff

BUT:

- But one must note that everyone is subsidised, rich and poor
- Price response is such that most people end up in the first block
- This is an out of sample prediction: data on price between 0.5 and 2.9 RMB, the prediction involves prices of up to 18.5 RMB.
- Deadweight losses show that, particularly among the poor, there is a preference for a cash subsidy rather than a water subsidy: the price distortion is significant.

Analysis Continued

- There are numerous problems with IBTs
  1. All households are subsidised but the subsidy depends on water consumption so this may adversely affect the poor
  2. Household size among the poor is often larger, we do not have information about this at present, but this could also adversely affect the poor when the IBT is based on a 4 family system
  3. Perverse incentives for water companies which may adversely affect the poor: the poor are loss making and therefore second in line for repairs for example.
  4. Revenue sufficiency: most people end up in the first block by our prediction, I.e. they are subsidised. Thus full cost recovery will not be achieved as required by the policy.
  5. Administrative costs.
  6. Metering issue: do poor households share a meter? How are the tariffs to be adjusted for this? Does the common property problem here imply higher welfare costs to the poor?
  7. Not efficient like a pure LRMC tariff.

Poverty Alleviation and Rural Land Use Policies: An Evaluation of the Sloping Land Conversion Programme

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Policy Context in Rural China

Market and institutional imperfections, e.g.

- Poorly defined property rights (tenure security, land renting rights).
- Problematic credit, labour and agricultural goods markets.
- Lack of local public goods.

↓

Inefficient agricultural practices e.g.:

- Surplus on-farm labour
- Farming on slopped unproductive lands
- Lack of long term investments

↙ ↘

'Poverty traps'

Deforestation & Soil erosion

↓

Externalities → e.g.:
• Major floods of the Yangtze River in 1998
• Dust storms affecting Beijing

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Towards a ‘win-win’ policy response

- A **‘win-win**’ land use policy response would aim to **simultaneously** assist people to **break the ‘poverty trap’** and **reduce negative externalities**

- For such a win-win policy to have a **long-run effect** the policy must address the **core causes** of these two types of problems, namely **institutional and market failures or ‘constraints’**

- This ‘win-win’ can be achieved via land use policies that provide **financial incentives** which impact households in two main ways:

  - Directly on household income.

  - Indirectly on household production decisions (namely labour supply decisions)

  - Overall individual preferences and perceptions.

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Sloping Land Conversion Programme (SLCP)

- **SLCP**
  - Provide direct financial incentives (subsidies) to rural households to reforest cultivated land with slope of 25 degrees or more.
- **AIMS**:
  - Environmental aims
  - Socio-economic aims:
    - Structural changes in rural economy
    - Poverty alleviation
- **TARGETS & SCOPE:**
  - Largest land set aside programme in the developing world
  - Convert 15 m hectares of cropland and 17 m hectares of barren land
  - 40-60 million households affected
  - Outlay of over US$30 billion dollars
  - Duration: 2002-2010

Aims and Methodology of this Collaborative Research

- **AIMS:**
  - **<u>Evaluate</u>** whether the SLCP is providing a '**<u>win-win'</u>** policy solution (long-run and short term impacts).
- **METHODOLOGY:**
  - Detailed household and village leader surveys collected in summer 2004.
  - Data collected for:
    - Detailed demographic, socio-economic and production data.
    - Pre and post SLCP
    - Both participants and non-participants
    - Ningxia and Guizhou Provinces
    - 286 households (155 in Ningxia, 131 in Guizhou), 37 village leaders.

Type of analyses

- Income impact analysis
  - Assess the impact of the SLCP on household income.
- Off-farm labour supply analysis
  - Assess the impact of the SLCP on the labour allocation decisions of households.
- Future intensions and choices analysis.
  - Assess households intentions and choices after the current SCLP ends.
    - Direct questioning of intentions'
    - Choice experiment.

Implications from Income Impact Analysis

- An overall insignificant effect of SLCP on incomes.
- Absence of increases in forest or livestock incomes
- A positive and significant impact on the revenue of the poorest and median income households.
- What about the long run?
  - Insignificant impact on off-farm labour income brings some concern over the long run viability of the SLCP.
  - Once subsidies are removed, the impact of the SLCP is to increase the number of participants HHs in the lowest quantiles of the net income distribution may lead to recon version after SLCP

Labour Supply Impact Analysis

- Our research has focused on examining how HH in rural china are lead to inefficient agricultural practices and economic decisions due to market and institutional constraints.
- SLCP may lift HH out of inefficient traps if it manages to relax these constraints.
- We now turn to evaluate the degree to which this is happening by examining the impact of SLCP on labour supply decisions.

Indicators of constraints explored

- Incompleteness of local agricultural markets
- Family size and composition (e.g. children, pensioners)
- Transaction costs (e.g. distance to township, cost transportation).
- Variation in agricultural taxes.
- Development of land rentals (e.g. easiness of land rentals)
- Tenure security (e.g.: expectation of land reallocation, perceptions over rights)
- Access to credit (e.g. easiness of borrowing money).

Impacts of SLCP on probability of being constrained

Dep Var: Proba of being constrained		
Indep Variables	Coefficient	Std. Err.
DID Parameters		
μ3	14.23*	0.30
λ3	-0.46*	0.10
τ3	-3.06*	0.08
DID Treatment Variables		
Treatment α	**-0.59***	0.11
Other Variables (X3)		
amount of arable land	0.056*	0.002
education	-3.02*	0.03
ag capital	-0.35*	0.06
ag productivity	-0.001*	0.0001
Ethnicity (1=Han)	2.89*	0.09
Constraint Variables		
Family size	**-2.30***	0.08
Family size²	**0.13***	0.01
Child<16? (1=Yes)	**0.47***	0.05
Pensioner>60? (1=Y)	**1.16***	0.54
Distance to road	**0.18***	0.01
Land renting easiness	**-0.20***	0.12
Access to credit	**-0.50***	0.11
Tenure security	**-0.47***	0.06
Tax variation	-0.0003	0.0002

- We find that participation in the program reduces the probability of being constrained.
- Reveals the source of constraints.
- Main impediments to off-farm labour supply:

- Institutional constraints: land rental rights, tenure security and access to credit.
- Transaction costs (distance to road).
- Family composition.

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Future intensions and choices analysis.

- Assess households intentions and choices after the current SCLP ends.
  - Direct questioning of intentions'
  - Choice experiment.

Example of Choice Experiment

Attributes	Policy A	Policy B	After current SLCP ends
Renting land	Very Easy	Very Easy	
Subsidy assurance	No	Yes	
Land redistribution	Not Allowed	Allowed	
Percentage of ecological forest	100%	80%	No Programme
Subsidy amount (Yuan/mu/year)	200	200	
Please Choose One →	❒	❒	❒

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Results from Choice Experiment: Relative Importance of SLCP Policy attributes

	Pooled Sample	Guizhou	Ningxia
Subsidy are assured	1	1	1
Renting Land Easy	2	2	2
Land Tenure Secure	3	2	3
Percentage of Ecological Forest	4	3	4

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Overall Policy Conclusions

- **<u>Income impact analysis</u>:**
  - SLCP seems to benefit lower income groups
  - Whether this impact on poverty will be lasting is not certain.
  - Signs of both under and over compensation across different households ➔ room for more targeted subsidies
- **<u>Labour supply analysis:</u>**
  - **Overall** it seems that the SLCP diminishes the burden of constraints and induces substitution away from excessive on-farm activities, yet we must note that:

  a) The program has a **<u>heterogeneous</u>** impacts on households ➔ room for better targeting of which households to include in the SLCP.

  b) Transaction costs and institutional constraints still remain major impediments to the development of off farm labour. Need accompanying (labour) policies.
- **<u>Future intensions and choices analysis:</u>**
  - Land tenure and land renting rights are crucial for the viability of the SLCP

Assessing the Case for Compensation for Collective Households Affected by the NFPP

NFPP Background

Policy introduced in 2000 in 17 Provinces and Autonomous Regions

Aims: restore natural forests; protect biodiversity; protect soil and water; increase timber production

Programme:

- Ban on logging in natural forests
- Measures to encourage new plantations
- Compensation for unemployed state forest workers and pensions for retired workers

compensation for Takings

Physical takings:

- Rights to private land taken by the state for public purposes
- Compensation generally paid at market value of land
- Large part of literature focused on rural land in China recently

Regulatory takings:

- Government actions that have the effect of reducing the value of rights to private land to, or near to, zero
- Ongoing debate about whether compensation should be paid for regulatory takings

Case of NFPP:

- We plan to apply two aspects of this literature to the case of the NFPP
  - Size of economic impact and whether all economically viable uses have been lost
  - Purpose of taking: providing public goods for wider population or correcting local market failures

Household Survey

- Survey in Summer 2005 –
- Face to face survey of 285 households in Guizhou Province
- 40 villages in 3 counties of Qiandongnan District (south of Guizhou Province) – Jinping and Liping had NFPP; Congjiang did not have NFPP
- Questions about property rights; income from all sources in 1997 and 2004; views on logging ban; stated preference questions about welfare losses from ban

Impact on incomes (1)

The general situation of the structure of the income

Income from each activity per year (yuan)	NFPP		Non-NFPP	
	1997	2004	1997	2004
Crops	275	349	958	836
Livestock	1110	1766	981	1386
Forest products	117	154	484	714
Timber harvests	221	17	99	96
Transfers of forest land	3.35	17	0	96
Employment	3203	9102	2719	6130
Other	210	676	12.5	88
Total	**5140**	**12070**	**5254**	**9250**

- ***The total income increase a lot in both nfpp and non-nfpp area***
- ***Timber harvests decrease much in the nfpp area compared with that in non-nfpp area***
- ***The employment changed a lot in the two areas***

Impact on Incomes (2)

Results:

- NFPP reduced timber income by around 500 yuan between 1997 and 2004 (mean income from timber in 1997, NFPP areas, was approx 450 yuan)
- NFPP didn't have a significant effect on total incomes because increases in income from employment for NFPP and non-NFPP households were much larger than any changes in timber income
- No impact of NFPP income from non-timber products

Impact on Welfare (1)

Stated preference data:

- asked minimum willingness to accept compensation to continue/introduce the logging ban to 2016 or willingness to pay to avoid the continuation/introduction of the logging ban to 2016
- four groups: 1) HH in NFPP asked WTA; 2) HH not in NFPP asked WTA; 3) HH in NFPP asked WTP; 4) HH not in NFPP asked WTP
- collected data on WTA and WTP for full ban and for partial ban with some timber harvest allowed for each HH
- person given option to accept no compensation and have no ban, or pay nothing to avoid the ban – then asked for reason

Impact on Welfare (2)

	WTA Full	WTA Part	WTP Full	WTP Part
WTA/WTP some amount – 'yes'	81%	91%	58%	48%
Not WTA/WTP any amount – 'no'	19%	9%	42%	52%
Reason for 'no' response				
Want to use forest	16	6		
Don't trust government to pay compensation	3	3		
Don't want to pay any tax			3	6
NFPP is not a problem			17	19
NFPP is a good thing			16	20

- Large numbers of respondents chose to have ban and compensation .
- Similar numbers choose to pay to avoid the ban or not to pay and accept the ban.

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Impact on Welfare (3)

		Mean	Median	Observations
WTA	Full ban	126.7	60	79
	Partial ban	98.5	40	88
WTP	Full ban	44.2	30	55
	Partial ban	27.4	20	35

- Most households have not experienced, or would not expect to experience very significant impacts on their overall Welfare.

- *WTA>WTP ,as the references said; what we will use depends on the property rights.*

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Important components of the welfare impacts

- Impacts of full ban > partial ban

  - Appropriate to consider the relative environmental effectiveness of the two options

- For the poorer households

  - Higher minimum amount of compensation required to accept the logging ban

  - Willing to pay an greater part of their income to avoid the logging ban (average of 15% comparing with the other households 0.7%)

- Welfare impacts in the long run

  -Might be more obvious, as the trees will grow up to be cut down then

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Summary and implications

Impact on incomes:

- Incomes from timber fell due to NFPP, but during period of rising total incomes because of increases in off-farm employment

Impact on welfare:

- Variation in welfare impacts – some households experienced losses, but many said they did not or even experienced benefits
- Poorest households expected higher welfare losses

Implications:

- If we think about whether there should be compensation based on economic impacts of taking, then not strong case – small impacts and not all uses of the land are prevented
- May be special groups to consider e.g. poorest HH or those with large investments
- Lower welfare losses with partial ban – could be net benefits from allowing limited timber harvesting

Further research:

- Since we find some costs and some benefits from ban, want to better understand effect on local net social welfare

这就是进村的"大路"……

哭泣之亲
身历三朝
吾母
老登山英社

BLUES
PHYS
DEPT

谢谢