

China's Case Study on Agriculture with A Specific Focus on Organic Rice

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Outline

1. Introduction

- 1. Background of the project**
- 2. Regional Economic Integration and its economic impacts of rice sector on China**
- 3. Regional Economic Integration and its environmental impacts of rice sector on China**
- 4. Current rural environmental policy**
- 5. Organic rice as a solution for sustainable development**

2. Policy gap of promoting organic rice

3. Policy recommendations for China's organic rice promotion

4. Feasibilities of proposed policies

5. Conclusions

Project Background

- RISPO II project
- How to meet challenges of Eastern Asia regional economic integration
- How to adjust after WTO accession
- WTO New round negotiation
- EIA law requirements of trade policy domestically
- China's eco-label scheme
- Economic, social and environmental significance of rice for China

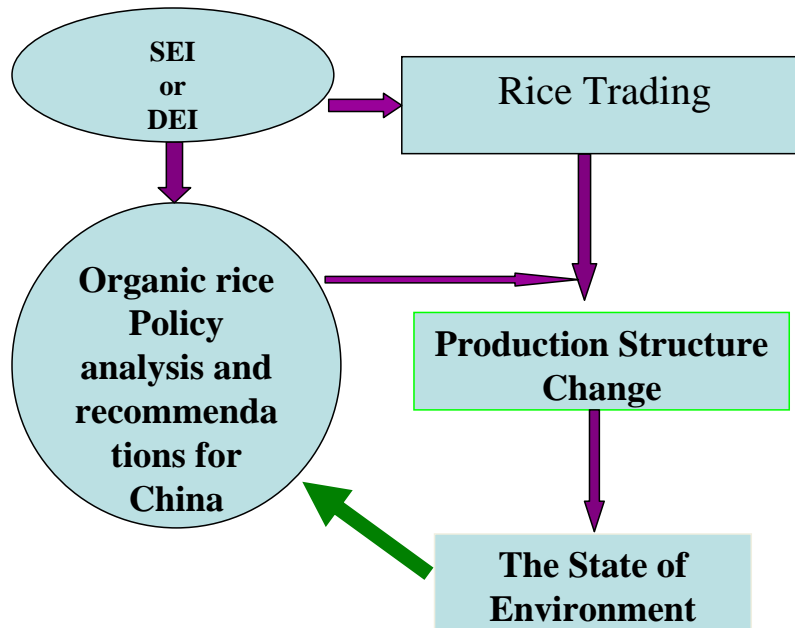
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Project Objectives

- Enhance China's understanding of the environmental, as well as social and economic implications of regional economic integration and implementing the WTO AoA, with specific focus on the rice sector.
- Assess the positive and negative environmental impacts of rice sector in the process of regional economic integration
- To provide policy recommendations for promoting organic rice along with regional economic integration process

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Logic Chain of Study



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States of rice production

- Importance of rice for China and Chinese
 - Rice eater in South + NE, more than half
 - Wheat eater in North, less than half
- Rice production

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China's rice growing regions and zones

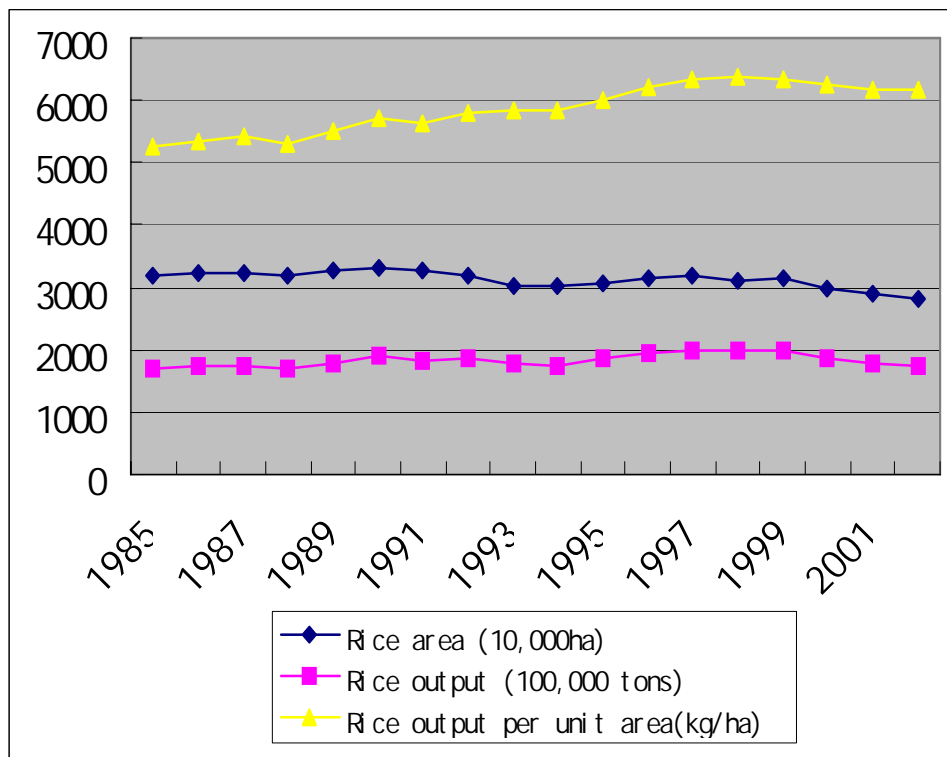


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China's rice planting regions and zones

Rice Area	North Rice Area			South Rice Area		
Rice Zone	North China rice zone	North-east rice zone	North-west drought rice zone	South China rice zone	Middle China rice zone	South-west high-land
Range	Bordered by Qinling Mountain Range-Huaihe River in the South and the Great Wall in the North	To the North of the Great Wall and East of the Great Xinganling Mountain Range	To the west of Hexi corridor and the North of Qilian Mountain Range	To the south of Nanling Mountain Range	To north of Nanling Mountain Range and south of Qinling Mountain Range and Huaihe River	Yunnan, Guizhou, Tibet and West Sichuan Province
Degree of Rice paddy drought	2~6	1	>6	<1	1	>1
Rice growth Peiod (month)	5~7	4~5	5~6	9~12	7~9	7~10
Average temperature in growth period (°C)	19~22.6	16.6~20	18.3~21.8	22~26	20~22以上	20以下
Rotation	Spring rice and wheat	Spring rice	Spring rice	Two harvests of rice per year	Rice and wheat or two harvests of rice	Rice and wheat
Rice type	High land middle japonica rice	Early japonica rice	Early japonica rice	Early, middle and late indica typerice	Indica and japonica rice	Indica rice in lower land, Japonica rice in higher land

National rice production situation — total output, unit output and sown acreage (1985-2002)

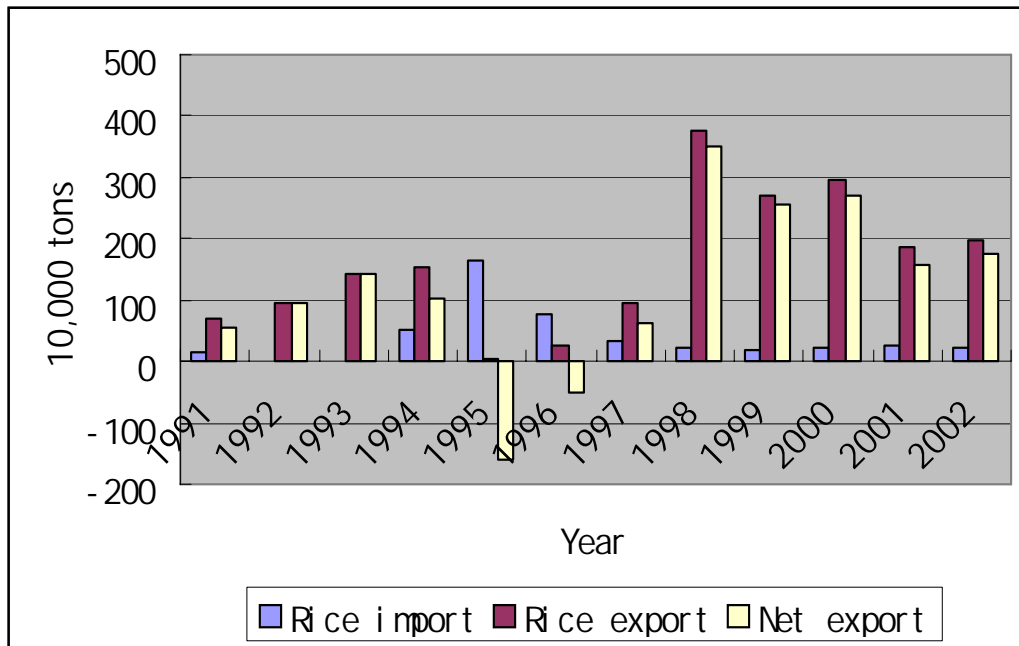


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Structural changes (%) in rice production in China, 1980-2000

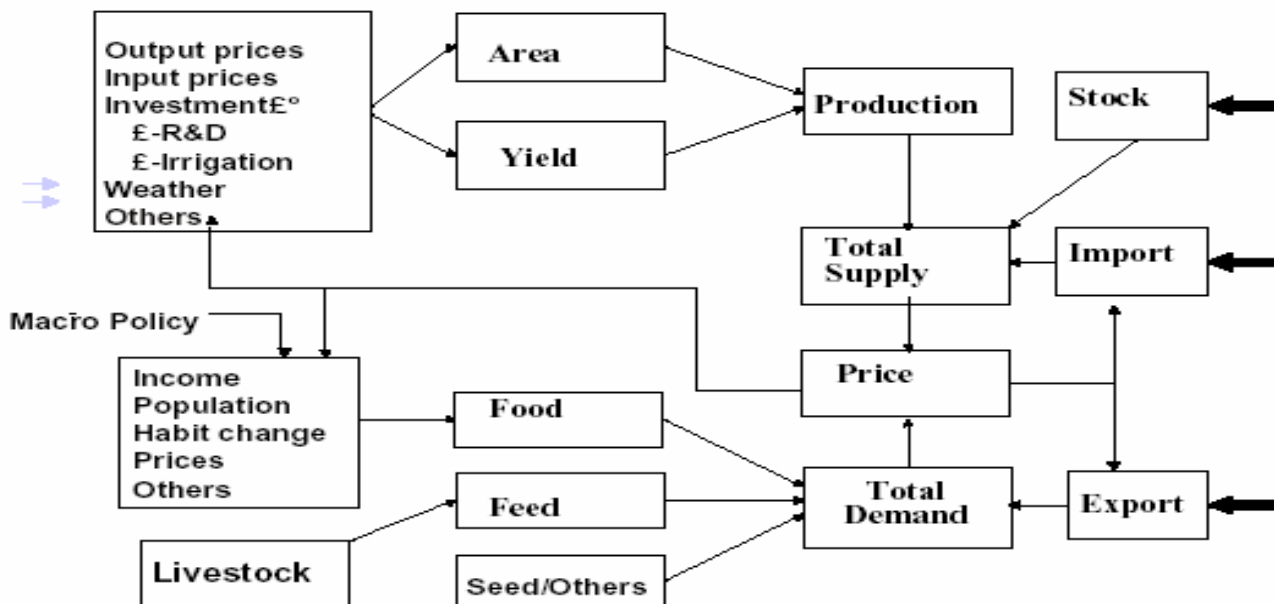
Year	Area shares by types		Shares by regions		Hybrid rice
	Indica	Japonica	South	North	
1980	89	11	94	6	14
1985	88	12	93	7	26
1990	84	16	90	10	49
1995	79	21	89	11	52
2000	73	27	86	14	50

Trade of rice — China's rice export and Trade Balance (1991-2002)



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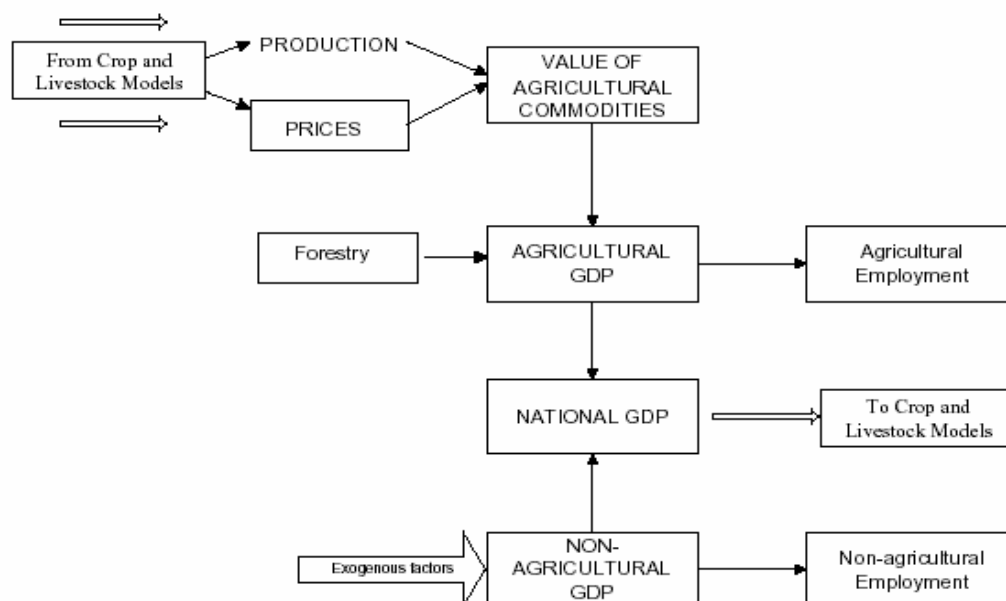
Projection of rice production with CAPSiM model



Partial Equilibrium Framework: the case of CAPSiM

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Projection of rice production with CAPSiM model



Schematic diagram of the macroeconomic linkages

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Opportunity to China's rice export under SEI

- Some of China-produced rice are competitive in price in the international market; some are not.
- Imported rice is not competitive in price compared with domestic-produced rice and is largely acting as a luxury consumption option (import from Thailand and Japan (99RMB/kg)).
- As the largest rice producer and consumer, China's domestic market will unlikely be impacted negatively after SEI

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Opportunity to China's rice export under SEI

- There exists 3 rice markets:
 - medium to lower quality polished indica rice occupies 30-35%
 - high quality polished indica rice accounts for 50-55%
 - high quality polished japonica rice possesses the rest 12-15%.
- Japonica rice has better potential than others.
- Major high quality japonica rice importers will be Japan, Korea and Chinese Taiwan province.

Main impacts from trade liberalization to rice regions

Impact factors		Trade related:		Domestic support related	Export subsidy
		Rice import expansion	Rice export expansion	green box; amber box; blue box	Exchange rate; Price subsidy
Primary or direct		Production shrinking, rice paddy or rice sown acreage decreases	Production increased, rice paddy or rice sown acreage expanded		
Secondary or indirect	Social	Job lose for rice farmers; Rural poverty; Et al.	Job creation for rice farming; Rural poverty alleviation; Et al.		
	Economic	Decreasing rice farming income; Et al.	Increasing rice farming income; Et al.		
	Eco-environmental	Chemical input increase or more non-point pollution; Positive to wetland reservation and restoration, Et al.	chemical input increase or more non-point pollution; Negative to wetland reservation and restoration, Et al.		

Economic and social impact assessment

Indicators¥rice planting areas		Nation al level	North- east	North - China	North- west	South China	Middle China	South- west
GDP	% of GDP attributed to agriculture							
	Agricultural productivity							
	Agricultural output							
Structure of Production	Average farm size							
Employment	Farm employment							
	Rural unemployment levels							
	Rate of creation of food processing businesses							
Income	Total farming income							
	Average earning of farmers and farm workers							
	Agri-environmental expenditures							
	Levels of agricultural support							
Prices	rice prices in the world market							
	rice prices in domestic market							17

Environmental impact assessment

Indicators¥rice planting areas		Nation wide	North- east	North- China	North- west	South- China	Central- China	South- west
Chemical inputs	Chemical fertilizer							
	Pesticide							
Water	Water quality							
	Water quantity (Freshwater Resources)							
Land	Soil quantity/Desertification and Erosion							
	Soil Quality/Degradation							
	Landscape							
Air Quality	Greenhouse gas emission(CH ₄ , N ₂ O)							
Biodiversity	Wildlife habitat							
	Wild species							
	Crop genetic diversity							18

Environmental impact assessment

- Environmental aspect
 - Chemical fertilizers and pesticide, especially water resources using, are increasing with sown area in Japonica rice regions
 - Chemical fertilizers and pesticide and water resources using, are decreasing with sown area and price changes in Indica rice regions

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Current rural environmental polities measures to tackle the problems

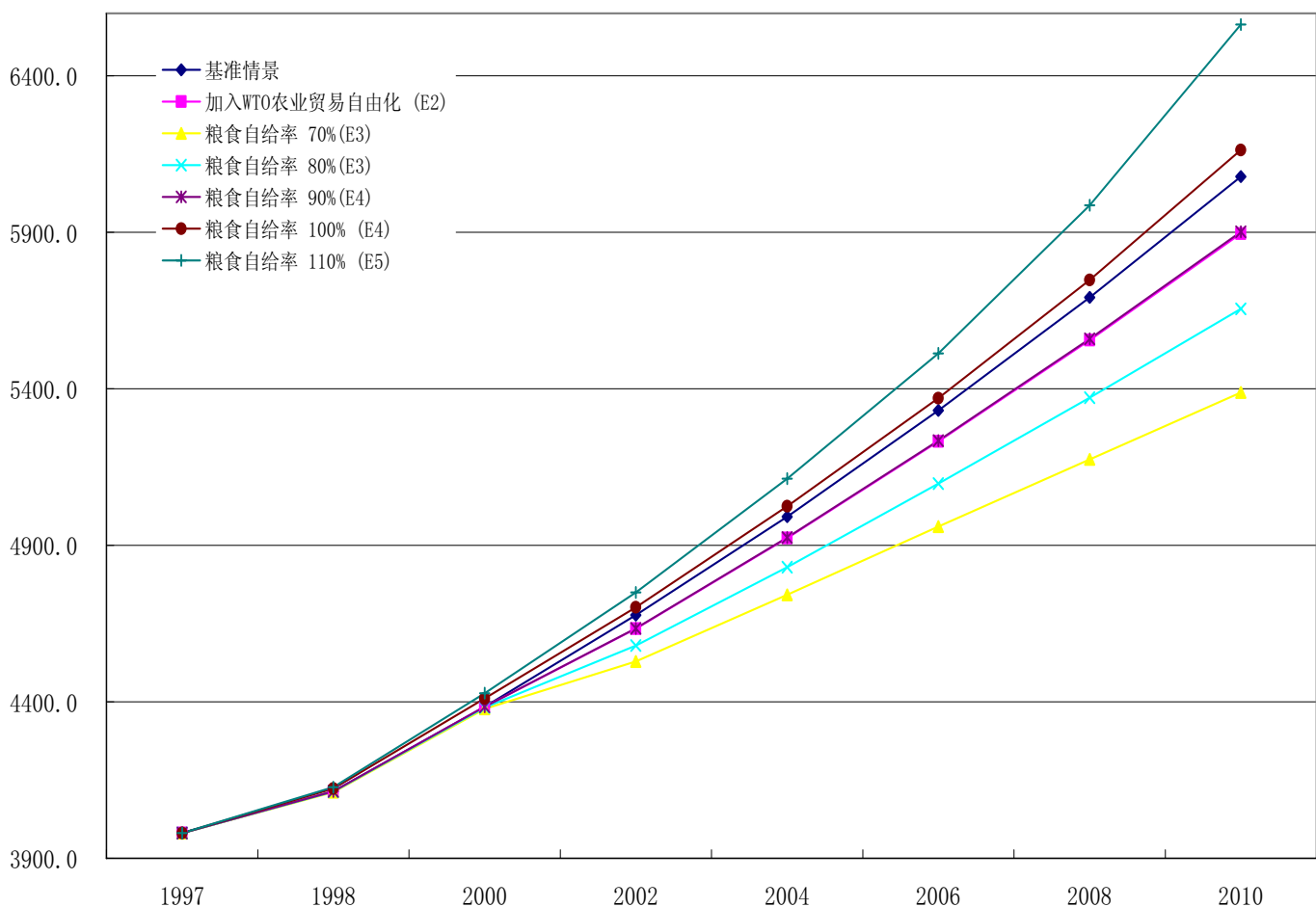
- there are regulations on water and chemicals applying but no strong rural environmental policies intervention so far, due to
 - Food self-sufficiency policy as the highest priority of China's agriculture policy, which tries to ensure all of people to have enough foods
 - non-pollution product as a basic market access standards, which is a compromise results of rice quantity concern and quality concern
 - Difficult to control non-point source pollution
 - Weak environmental management capacity in rural area

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Current rural environmental policy measures to tackle the problems

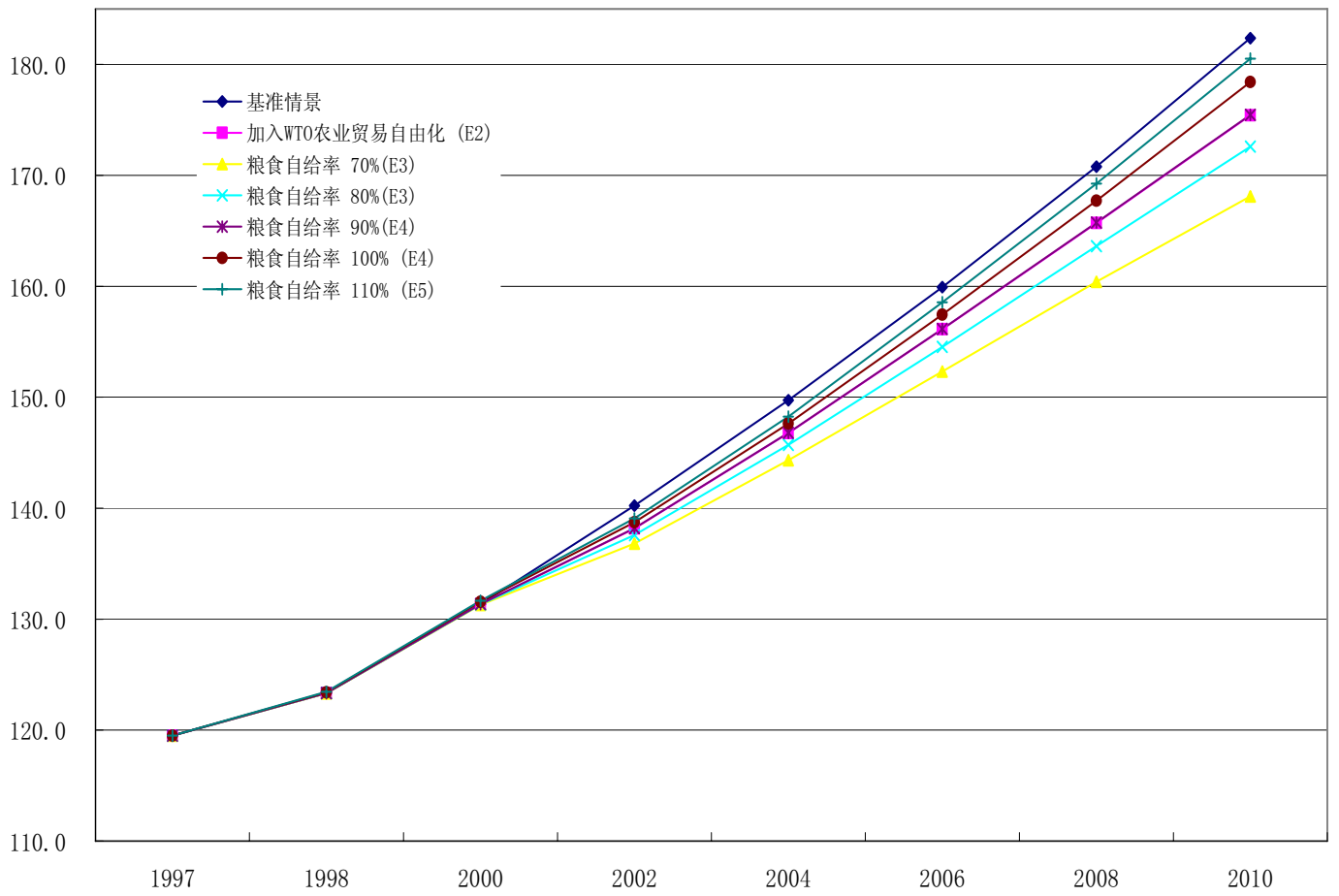
- The most efficient policy is to low down the level of food self-sufficiency, which would dramatically reduce chemicals and water resources
- Instead China would develop more labour intensive production (vegetables, fruits and manufacture products) rather than land intensive and resource intensive production (rice, wheat etc) , according to resource factor endowment of China
- The following figures show how significant of food self-sufficiency rate changes

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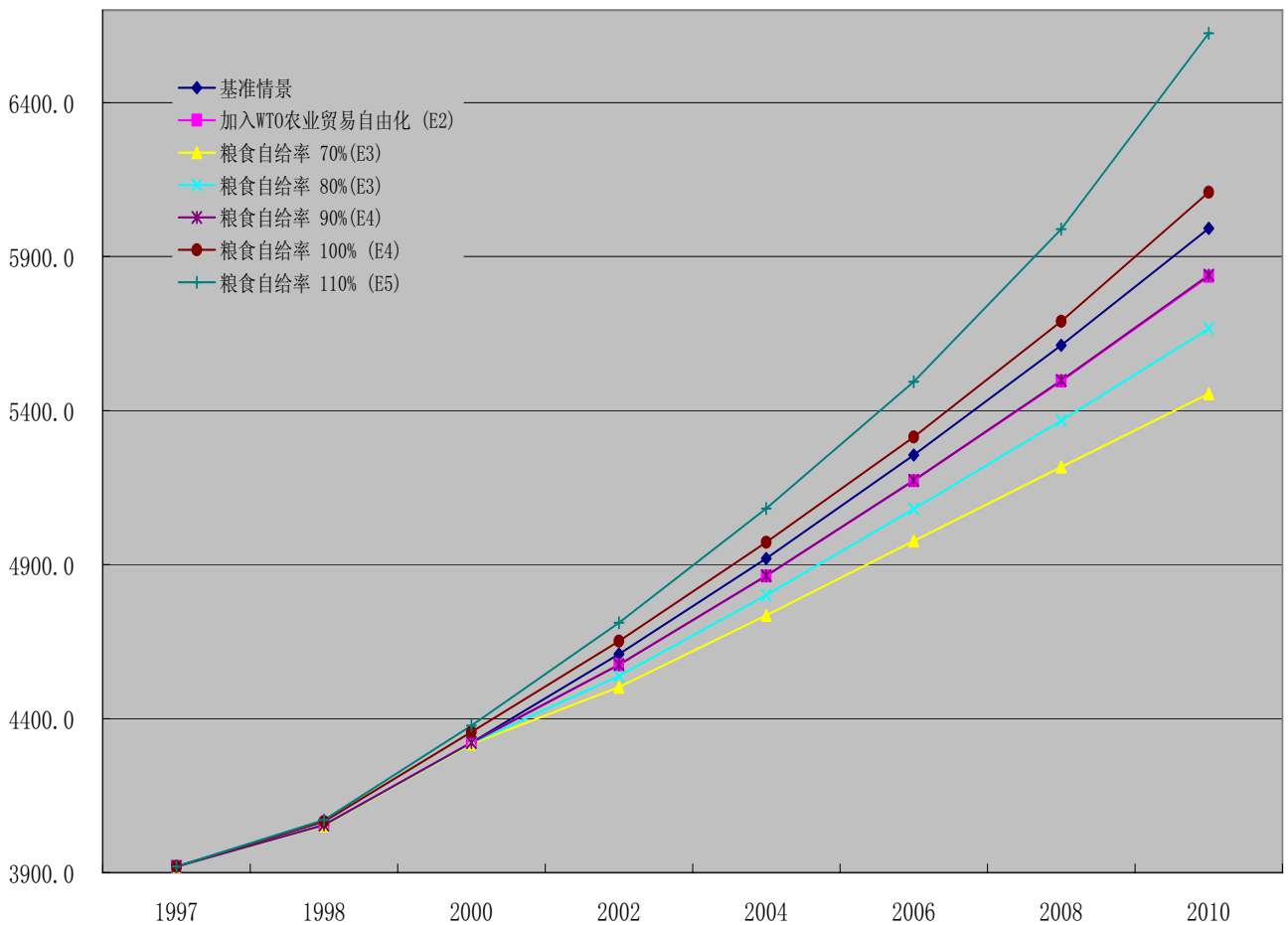
Chemical fertilizer consumption at different food self-sufficient level

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Pesticide consumption at different food self-sufficient level

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Irrigation water consumption at different food self sufficient level.

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Organic Rice as one of the solutions to mitigate negative environmental impacts

- Under the policy of food self-sufficiency, organic rice could be one of the solutions to mitigate negative environmental impacts, because it could:
 - harmonize agriculture policy and environmental policy for sustainable development
 - gradually substitute land-intensive rice production by labor-intensive products
 - reduce non-point source pollution and to increasing farmer's income
 - change its subsidies structure and to release taxes burden of farmers
 - reduce chemicals using indirectly

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Organic rice study

- **Definition and catalogue**
 - **Organic rice in organic food scheme**
 - **Green rice in green food scheme**
 - **Non-pollutant food as basic standard for market access**

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Organic rice study

- **Sales and market shares**
 - Difficult to have a statistical data, roughly taking only 1-2% of total rice market
 - Two major sale's model
 - Special desk/booth in supermarket
 - Special chain stores

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Organic rice study

- **Production**
 - Two major types of producers
 - Millions of household-size farms around the country
 - Several big size State-own Farms in Heilongjiang and Xinjiang
 - Amount of certificated organic rice
 - Under survey
 - Some relevant information:
 - certificated organic food enterprises: 2,300;
 - certificated organic food plantation area: 5,300,0000 hr;
 - certificated organic food production: 3,800,000 ton, or a share of 0.1% of total food market (world average is 2%)

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Organic rice study

- **Consumption**
 - **Major consumers are**
 - Ones who cares health very much
 - Educated people
 - Middle class
 - Hotels and luxury restaurants

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Current Policy of China's organic rice promotion

- **Cover the 3 following aspects**
 - **Production**
 - Develop special zones for organic foods
 - Support state-farms to have organic rice programs in Northeast of China
 - Provide technical guidance for farmers to use chemicals rightly and less
 - **Consumption**
 - Forster potential consumers by education
 - Advertise for organic products in major media in China
 - Have been trying very hard to access to Japan and Korea market to enlarge consumption
 - **Market**
 - Adapt the organic product standards of International Federation of Organic Agriculture Movements (IFOAM)³⁰
 - Establish the special chain stores

Policy gap of China's organic rice promotion

- **Key barriers to promote further**
 - **Very limited domestic market**
 - **Constrained international market**
 - **Trade barriers of exporting**
 - **Not a member of GEN yet**
 - **Credibility of products due to governance problems**

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Policy scoping and screening

	Production Consumption	Market	Trade
MBIs	Enlarged market with REI by tariff reduction	Transaction costs reduction	Tariff
C&C	Enlarged market with SEI by non tariff reduction	Legal Regulation for credibility	Non-tariff

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Policy recommendations for China's organic rice promotion

- **Cover the 3 following aspects: Production, Consumption and Market**
- **The most efficient policy to promote China's organic rice is to have a significant rice tariff lowering down in the region along with SEI/DEI**
- **But our national study focuses on the credibility problem of China's organic rice**

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Policy recommendations for China's organic rice promotion

- China's national policy suggestions on improvement of organic rice credibility will address on the following aspects, according to the theory of public policy:
 - To differentiate the responsibilities between Central, provincial and local authorities
 - To clarify the responsibilities among the ministries which are involved into organic rice (MOEP, SFDA, MOA, et al.)
 - To make right legislations to avoid potential law conflicts by National People's Congress
 - To enforce the relevant laws by Central governmental bodies rather than local authorities.
 - To have a transparent mechanism

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Policy recommendations for China's organic rice promotion

- Specific policy suggestions are:
 - To have a food safety and security law issued by National People's Congress, which ensures food quality and quantity of China and the balance in between as well as addresses on other food issues
 - To establish a verticalized food supervision system responsible by central governmental body State Food Quality Control Bureau, under the proposed law of food safety and security of China
 - To put all of certificated organic rice info on the web for the public to verify online
 - To redefine the function of Ministry of Agriculture's green food center as a non-profit organization to provide technical support services rather than producing organic rice
 - To establish a jointly committee of organic rice trading with trade partner for improving TBT, SPS and credibility issue

Policy recommendations for China's organic rice promotion

- Feasibilities of having a food safety and security law by NPC
 - It's on the right track of Chinese legislation body – National People's Congress – who cares the food quality and quantity very much
 - It takes time to issue the law among all of stakeholders who are involved into the food quality and quantity issues
 - The biggest challenge is how to keep balance between food quality and quantity for such 1.3 billion population country who needs enough foods to feed people and also needs quality food as well as demands good environment

Policy recommendations for China's organic rice promotion

- Feasibilities of establishing a verticalized food supervision system responsible by central governmental body State Food Quality Control Bureau
 - It's on the same direction of Chinese central government reform
 - It takes time to adjust the relations between Central and local authorities

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Policy recommendations for China's organic rice promotion

- Feasibilities of putting all of certificated organic rice info on the web for anybody to verify them online in real time
 - It's the least transaction cost way to verify the certificates on internet age.
 - By stakeholder analysis, the biggest barrier is the governmental officials who could gain benefits from the current certification system
 - It eventually has to change under pressure of the public and supply chain demanders₈

Policy recommendations for China's organic rice promotion

- Feasibilities of redefining the function of Ministry of Agriculture green food center as a non-profit organization to provide technical support services rather than producing organic rice
 - By a stakeholder analysis, the biggest barrier is green food center itself who gains so much benefits from the current arrangements
 - Consumer's pressure would push it change eventually
 - New Agriculture minister (appointed in late March) may have different policies comparing with ex-minister.

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Policy recommendations for China's organic rice promotion

- Feasibilities of establishing a jointly committee of organic rice trading with trade partner for improving TBT, SPS and credibility issue
 - Such jointly committee could prevent abuse of TBT and SPS measures to avoid non tariff barriers in SEI/DEI
 - It should be the easiest policy to implement in the region if the potential rice importers agree along with SEI/DEI, such as Japan and Korea
 - The biggest barrier is from the political pressures to their own national governments from rice farmers, especially before election

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Conclusions

- The major added values of our study are:
 - Have explored the relations between regional trade of rice and the environmental changes of China. The higher the food self-sufficiency rate of China, the more the environmental degraded
 - Have found the food and environmental governance problem is the root cause of China's organic rice creditability
 - Have provided some principles and operational policies of improving poor governance

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Conclusions

- Based on our study, our strategic policy recommendation is
 - To foster potential national organic rice consumers in a long run
 - To have a significant organic rice tariff lowering down in the region along with DEI/SEI to enlarge market which is the most effective way to promote organic rice in short run, particularly,
 - to treat organic rice by sector reduction approach to low down its tariff to zero due to its environmental and social significances

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Conclusions

- One possible need for future research is
 - to estimate the benefits and costs of China's governance system reform based on institutional economics

謝謝！！
THANKS!!!