

**Comprehensive benefit of Organic  
—case study in Jiangxi Province  
有机农业综合效益分析**

Qiao Yuhui 乔玉辉 中国农业大学 (CAU)

Halberg, Niels 丹麦ICROFS

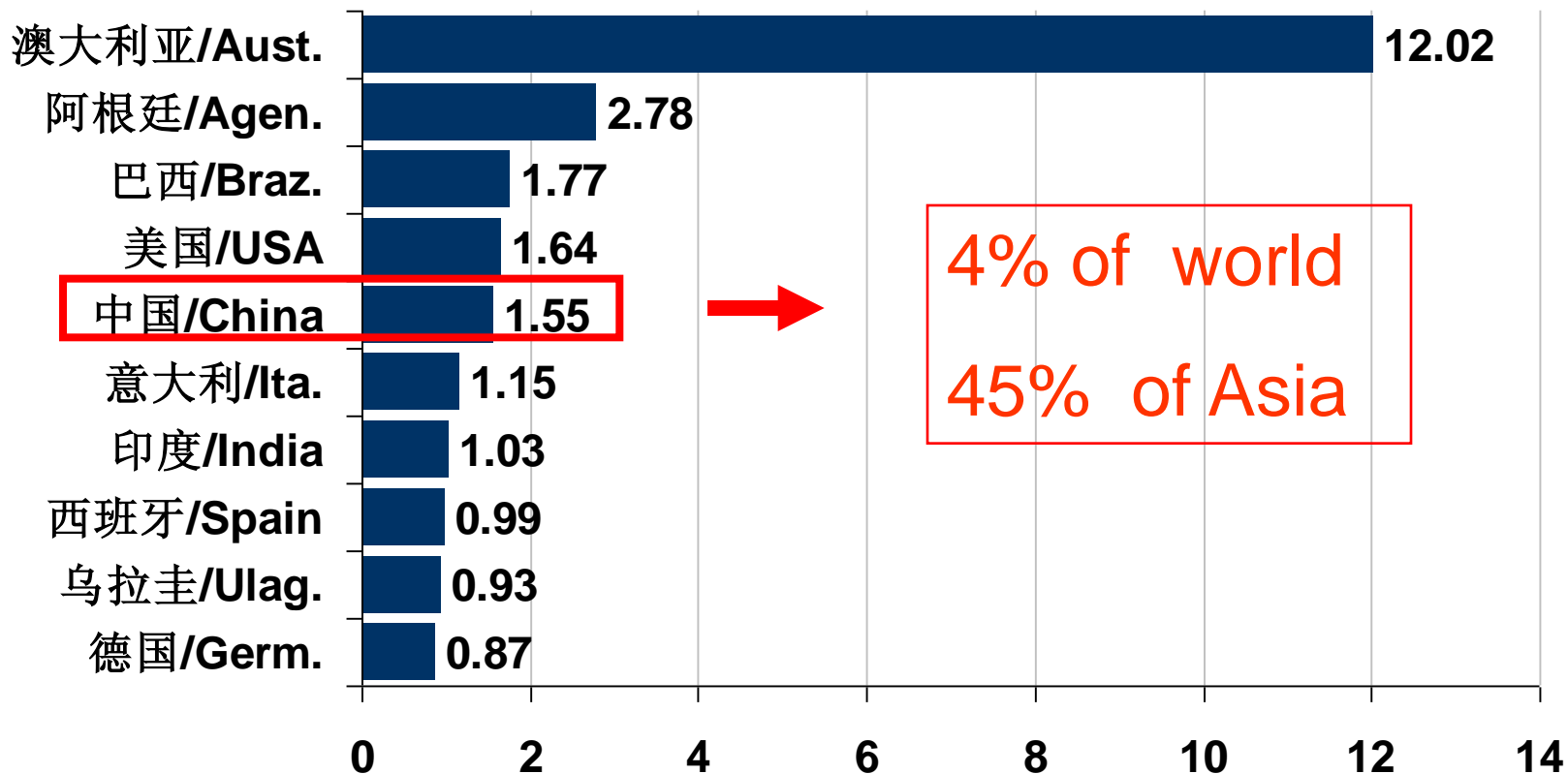
# 提纲/Outline.....

1. 研究背景 Research Background
2. 研究方法 及 数据采集  
Methodology for Data Collection
3. 研究结果 Findings
4. 结论 conclusion

# 1. 研究背景 Research Background

## 世界及中国有机农业发展状况 (2007)

/Overview of world and China Organic production (2007)

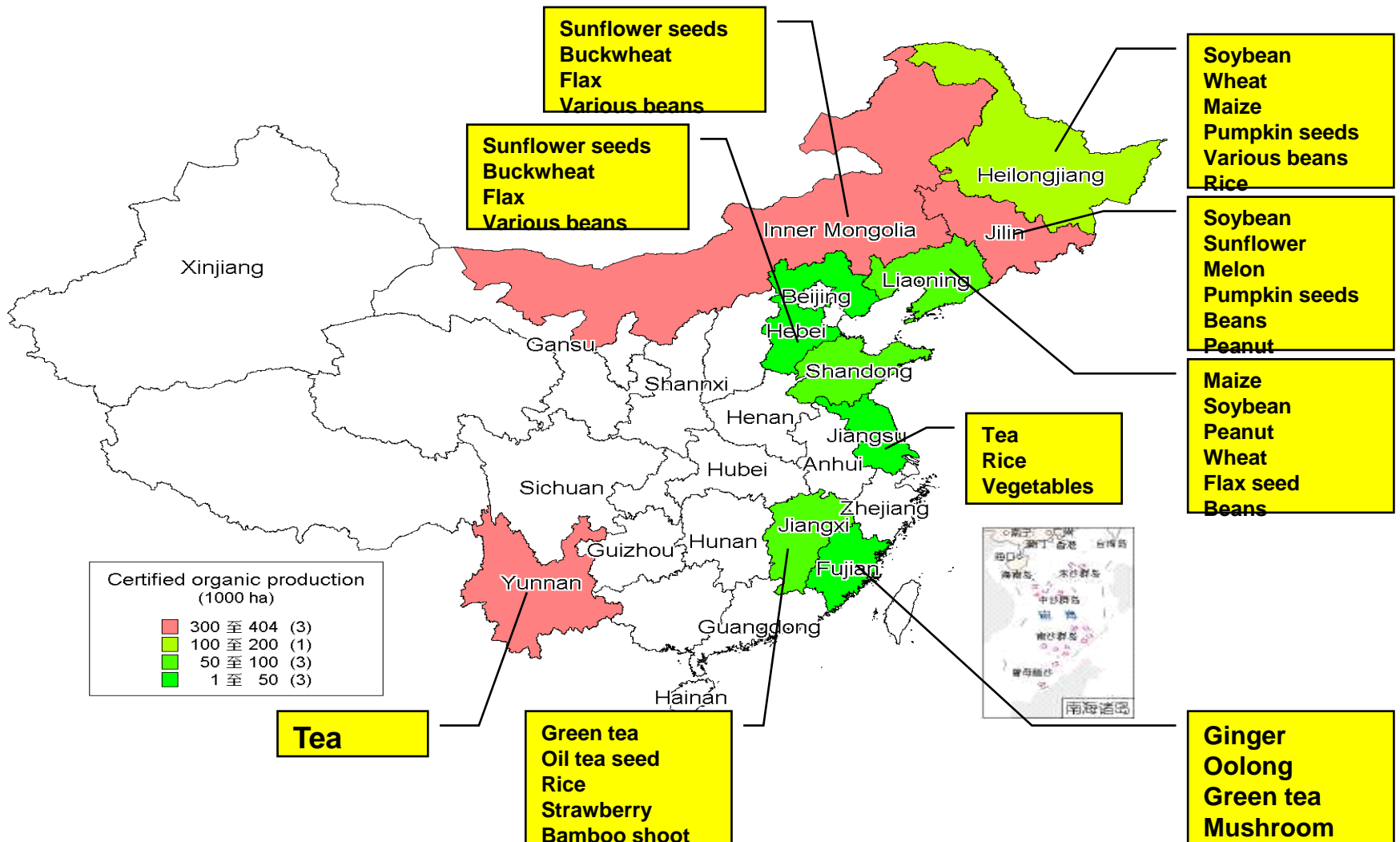


Million Hectares

FiBL/IFOAM survey 2009

# Distribution of organic agriculture production in China

## 中国有机农业的分布



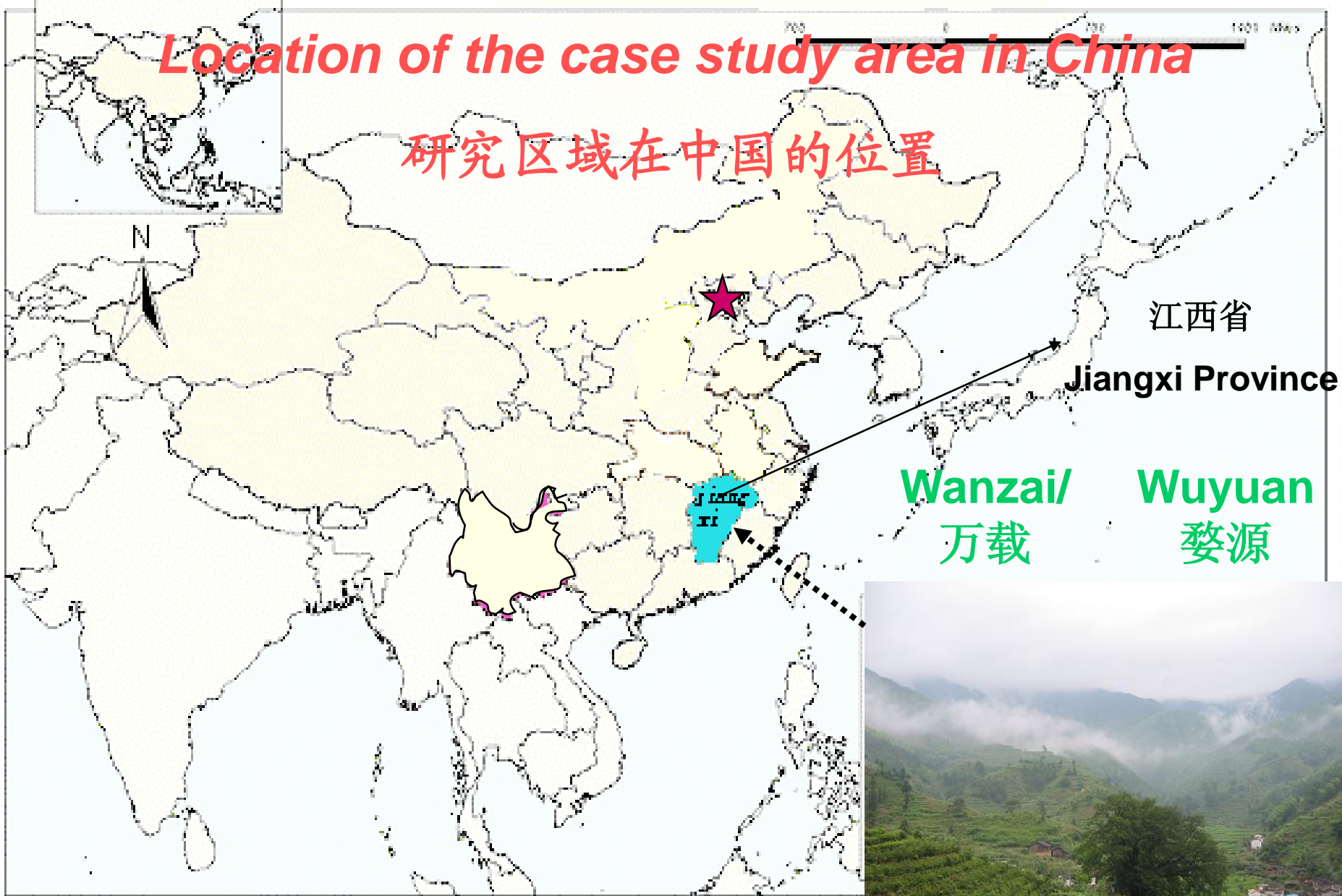
# The Bottomline

- Organic Agriculture is a promising tool for addressing the multi-dimensions of poverty within the context of the MDGs 有机农业可以从多个方面解决农民的贫困问题.
- **BUT:** The challenge lies in providing concrete evidence to support policy design/但目前还缺少一些数据来支持政策的制定.
- **Objective:**  
The study will clarify **to what extent and under which circumstances** do Organic Agriculture contribute to the fulfillment of the Millennium Development Goals/我们的目标是为了了解在中国有机农业到底可以在什么条件下，在多大程度上可以解决农民的贫困问题。



# Location of the case study area in China

## 研究区域在中国的位置



江西省

Jiangxi Province

Wanzai/  
万载

Wuyuan  
婺源







**Wuyuan organic tea:** Company lead, only tea is organic and fair trade (certified) 溪头有机茶: 公司引导, 只有茶是有机和公平贸易 (获得认证的)

**Wanzai organic project:** village focus, ginger, bamboo, soy beans, etc. certified, all land organic 菱湖有机项目: 主要是姜、竹笋、大豆等, 已经获得认证, 都是有机

## 2. 研究方法及数据收集

# Methodology for Data Collection

- 通过问卷对农户进行调查访问/individual households with survey questionnaire
- 集中调查（县乡村领导干部、大户、公司代表等）focus group interviews including village,town, county, leaders; larger farmer groups and company representatives
- 其它资料收集other secondary data collection



## 2. 研究方法及数据收集

# Methodology for Primary Data Collection

调查存在选择的原则 **Selection Principles of the surveyed villages:**

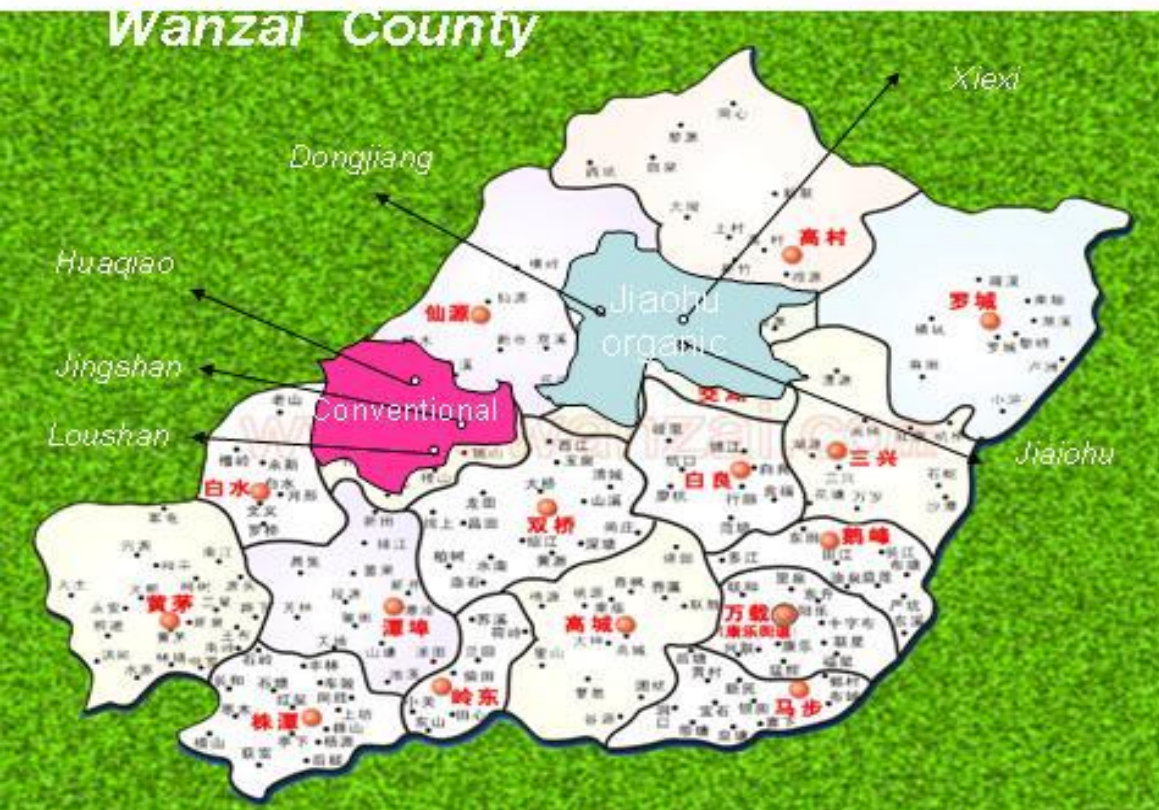
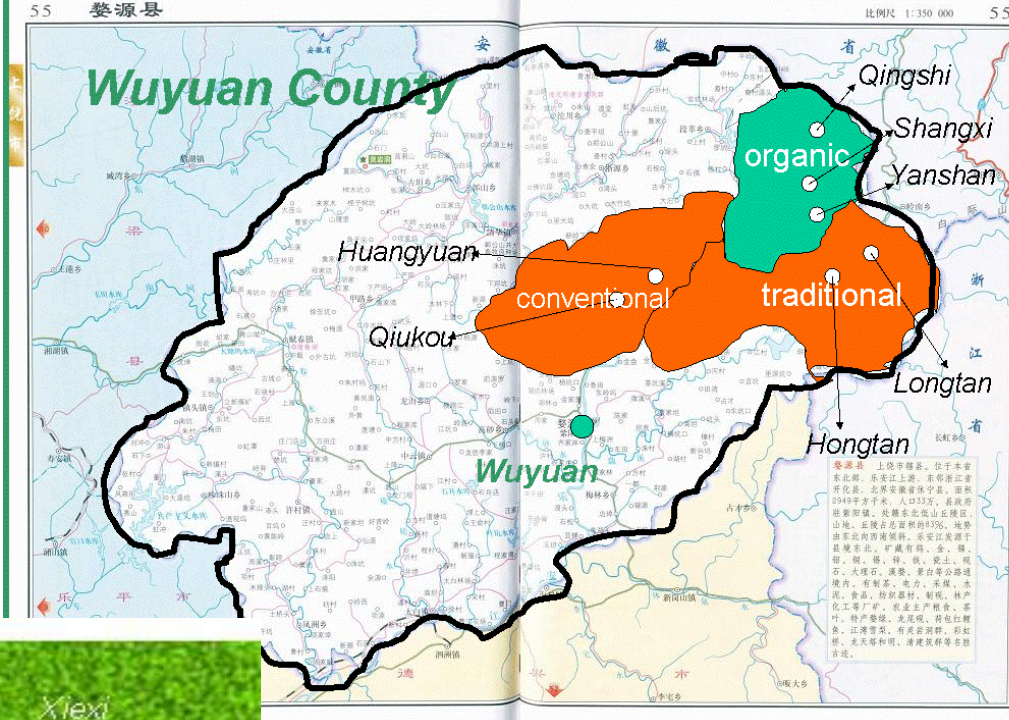
有机村 Organic villages:

至少有五年的有机农业历史 At least five years experience in organic farming

与有机村对照的常规村子 conventional villages as comparison

- 类似的生态农业条件 similar agro-ecological condition
- 类似的村子规模 similar village scale
- 主要的粮食作物和经济相似，但不同的生产体系 similar staple & cash crops and different production system (with chemical inputs for conventional and almost no input for tradition agriculture).

婺源  
Wuyuan



万载  
Wanzai

**Table 1 Characteristics of the survey villages in Wanzai County**

表1 万载调查村庄的基本情况

	Jiaohu town 茭湖乡 (organic 有机)			Chixing town 赤兴乡 (conventional 常规)		
Items village	Jiaohu 茭湖	Xiexi 谢溪	Dongjiang 东江	Loushan 楼山	Huaqiao 花桥	Jingshan 镜山
<b>Groups/村民小组</b>	20	20	15	14	31	12
<b>Household/农户</b>	597	458	389	298	849	315
<b>Total population/总人口</b>	2072	1592	1404	1080	3416	1100
<b>Arable land 耕地面积 hm<sup>2</sup></b>	112	128	117	61	243	78
<b>Paddy land 水田面积 hm<sup>2</sup></b>	95	115	111	55	231	57
<b>Dry land/旱田 hm<sup>2</sup></b>	17	13	7	6	12	21
<b>Forest/林地 hm<sup>2</sup></b>	1333	800	533	414	1667	247
<b>Annual (USD) income/capita 年人均收入</b>	<b>249</b>	<b>238</b>	<b>257</b>	131	140	135

**Table 2 The characteristics and crops of the survey village in Wuyuan**

**表2 万载调查村庄的基本情况**

	Organic village/有机			Conventional village/常规			
Village/村庄	Shangxi	Qingshi	Yanshan	Longtan	Hongtan	Qiukou	Huangyua
Household/农户	526	529	445	281	382	508	164
Total Population/人口	1700	1710	1459	1048	1361	2016	657
Arable Land/耕地hm <sup>2</sup>	6.7	3.5	5.9	3.9	45.8	4.1	2.2
Paddy Land/水田hm <sup>2</sup>	51	57	65	75	49	66	41
Tea Garden/茶园hm <sup>2</sup>	23/16	20/7	26/10	17	20	67	40
Forest/林地hm <sup>2</sup>	127	1333	31	563	567	**	**
Main crops/主要作物	Rice, rape, tea, bamboo, oil tea etc.						
Average Income/ Capita (USD)人均收入	164	106	168	286	179	216	171



## 2. 研究方法及数据收集

### Methodology for Primary Data Collection

**调查农户的选择原则/Selection Principles of the surveyed households:**

- 每个村子任意选择35户，6个村共210户 Randomly selected 35 HHs from each village/210HHs



## 2. 研究方法及数据收集 Methodology for Primary Data Collection

pre-test: 03-06; 12-19 June, 2006



Wuyuan and Wanzai  
by QYH and GYX



### 3. Findings/研究结论

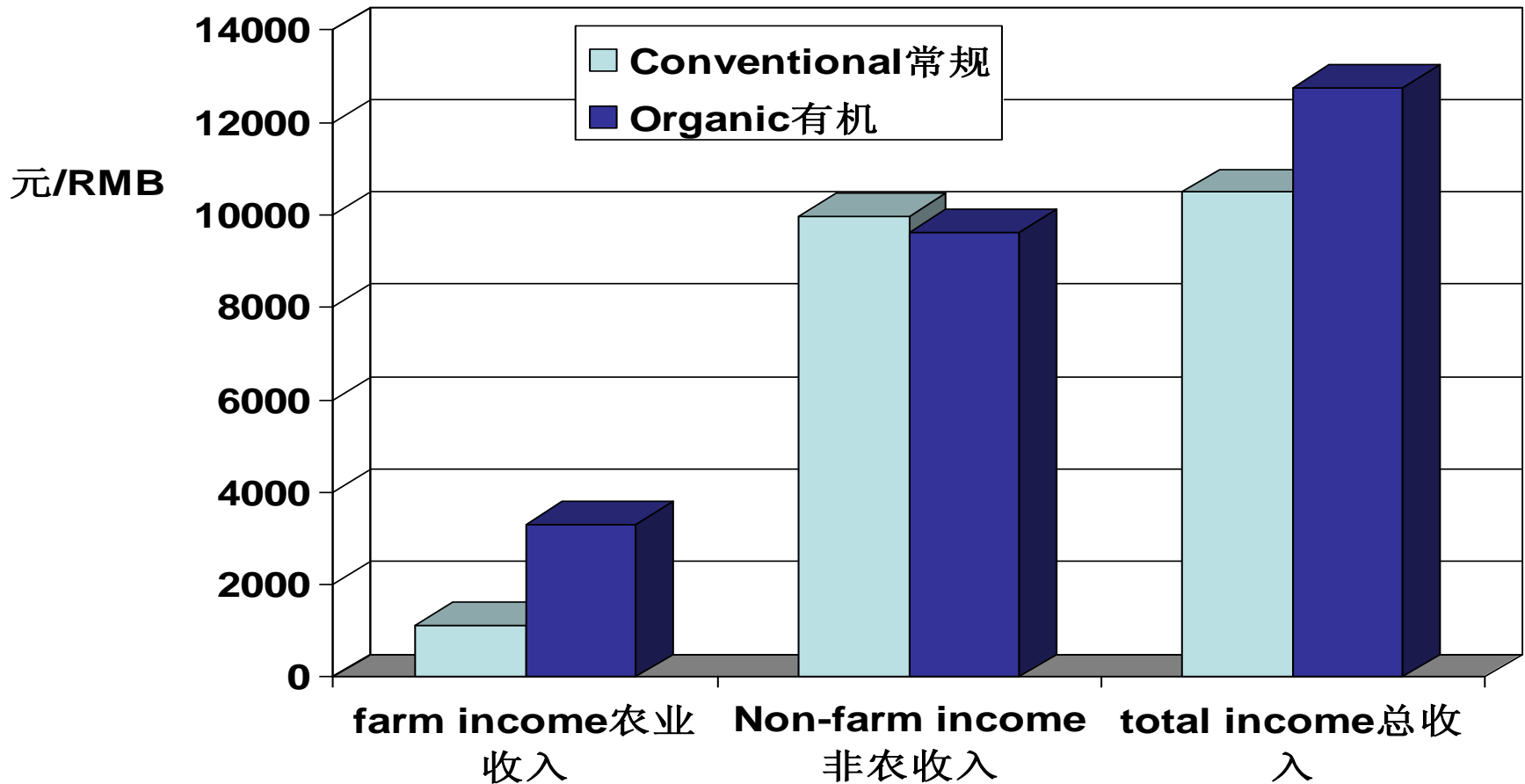
- Income and economics issues/经济效益
- Environment protection issues/环境效益
- Social aspects: Labor input, women equality , Food etc/社会效益

Income and economics issues

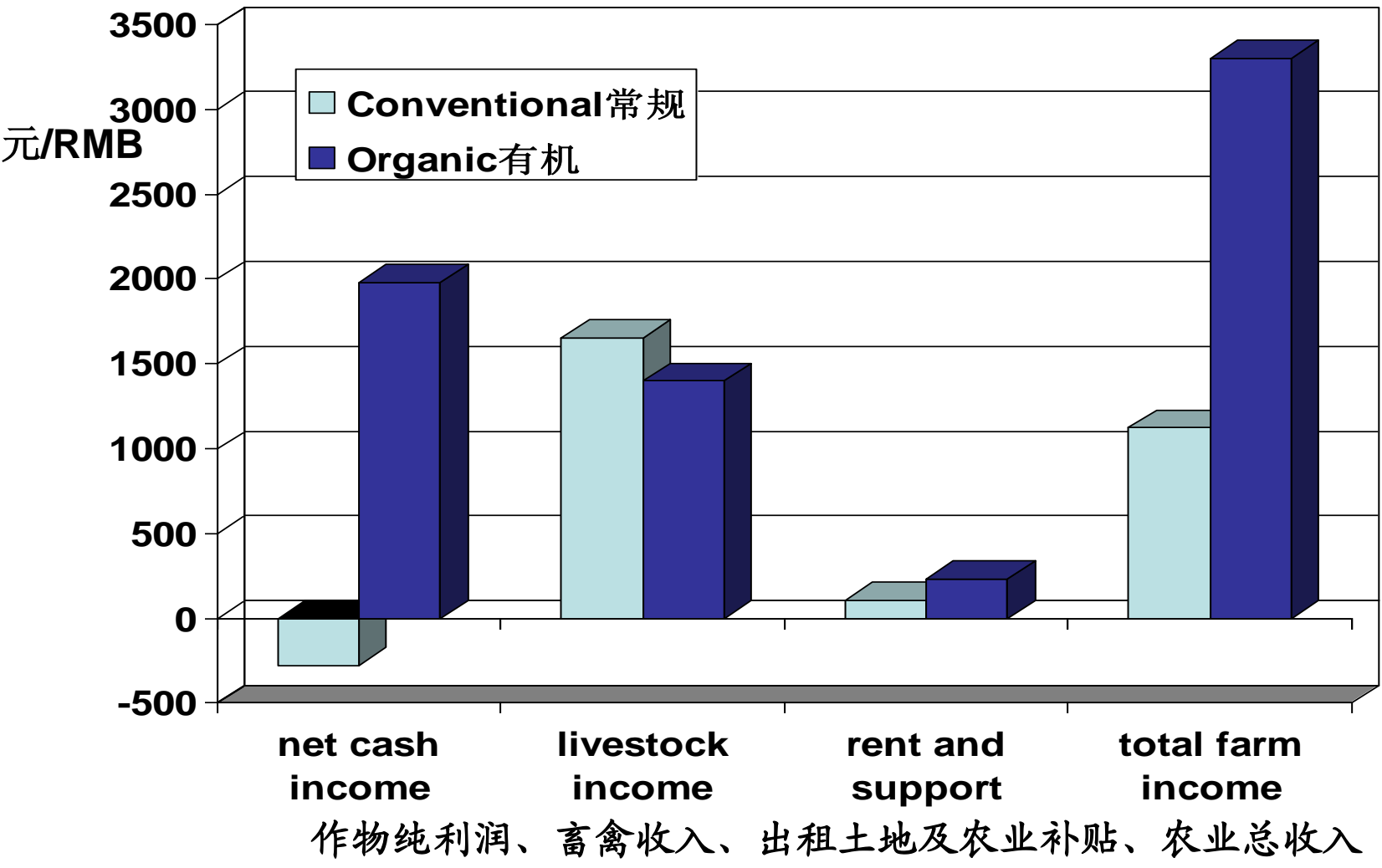
经济效益

# Income in RMB per HH , Wanzai

## 万载调查农户每户的收入情况



# HH income from farm activities: Net crop income, livestock sales, support 调查农户的作物纯利润、畜禽收入、出租土地及农业补贴、农业总收入



# Household income for different items, Wanzai

## 万载调查农户收入分析

	Total Sample (n=198)	Non-Organic (n=45)	Organic (n=100)	t-stat <sup>2)</sup>
Total value crops sold/作物销售	2269	1097	3511*	3.24
Total variable cash costs/各种成本	1201	1500	1290	-0.31
Net cash income <sup>1)</sup> 作物生产收入	973	-419	2077**	4.77
Total value incl. own food/自己食用食品价值	4273	3350	5477*	2.7
Total variable costs incl. own labour/自己的劳力投入	3085	3115	3574	0.68
Profit from crops <sup>1)</sup> 作物生产利润	1123	201	1848*	3.01
Total value livestock/家畜生产价值	1524	1467	1319	-0.4
Total non-farm income/非农收入	9600	11479	9820	-0.54
Total household income家庭总收入	11980	12520	13145	0.21

# The family income of Organic and Conventional HH Wuyuan

## 不同操作类型农户家庭收入情况（婺源）

Net income/RMB

元/RMB

14000  
12000  
10000  
8000  
6000  
4000  
2000  
0

- 茶生产净收入 Net tea income
- 农业净总收入 Total farm income
- 家庭总收入 Total family income

常规农户

有机农户

Conventional HH

Organic HH





# Household income for different items, Wuyuan

## 婺源调查农户收入分析

	Total Sample (n=198)	Non-Organic (n=45)	Organic (n=100)	t-stat <sup>2)</sup>
Total value crops sold/作物销售	1375	1187	1870*	2.1
Total variable cash costs/各种成本	917	1088	913	-1.5
Net cash income <sup>1)</sup> 作物生产收入	441	92	930*	2.5
Total value incl. own food/自己食用食品价值	2723	2909	3439	1.2
Total variable costs incl. own labour/自己的劳力投入	3691	3906	4095	0.5
Profit from crops <sup>1)</sup> 作物生产利润	-968	-997	-656	0.9
Total value livestock/家畜生产价值	800	1003	727	-1.7
Total non-farm income/非农收入	9904	8970	8910	-0.04
Total household income <sup>1)</sup> 家庭总收入	11161	10113	10608	0.4

# Household income for different items, Wuyuan

## 婺源调查农户收入分析

	<b>Organic</b> 有机农户	<b>Conventional</b> 常规农户	<b>Sig.</b> 显著性
Total value Tea sold 茶生产收入	1185.8 ± 194.7	459.8 ± 88.3	**
Net Tea cash income 茶生产净收入	767.1 ± 173.1	195.7 ± 85.0	*
Ratio of Tea/Farm income 茶/农业收入	45.6% ± 10.5%	26.9% ± 8.8%	NS
Ratio of Tea/Total income 茶/总收入	7.2% ± 1.6%	1.6% ± 0.7%	**

Environment Benefit

环境效益

## Use of agro-ecological methods and planned diversity in organic and non-organic households in Wanzai.

	Total Sample	Non-Organic Farmers	Organic Farmers	t-stat
Number of agro-ecological methods used/生态农业措施	6.2	5.1	7.5**	5.11
Diversity of crops, No. /作物多样性	11.6	11.0	12.4	2.15
Number of Soil conservation methods used/土壤保护措施	4.5	4.2	4.9	2.38
Pct of land with legumes/豆科作物面积比例	12	4	21**	3.62
Livestock diversity/牲畜多样性	4.7	4.2	5.2	1.53
Pct area with synthetic pesticides applied/使用合成农药比例	n.a.	40	0	n.a.
Pct area with natural pesticides applied/使用天然农药比例	n.a.	0	29	n.a.
Amount of fertilizers used, kg/化肥施用量		192	109	n.a.
Manure use, kg per ha/有机肥施用量	15821	12656	21190*	3.35

## Two scenarios happen in China organic agriculture development

1. **All** the crops converted to organic as Jiaohu town

2. Only **cash** crops converted to organic as Xitou town

more

less

Contribute \_\_\_\_\_ benefit to the environment

- ✓ At least avoid degradation
- ✓ increase environment awareness

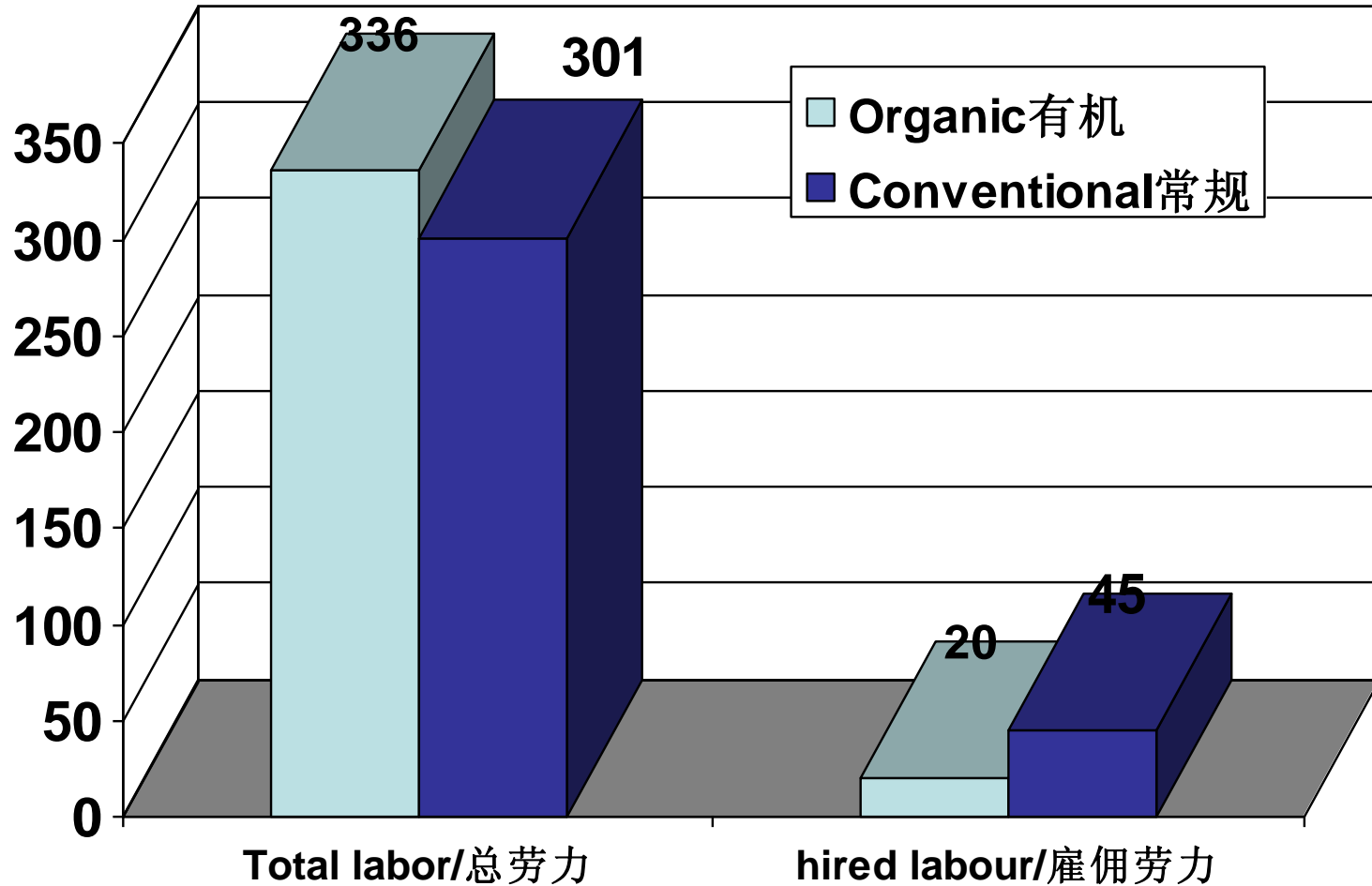
**Social aspects:** 社会效益

labor input, women equality, Food, etc

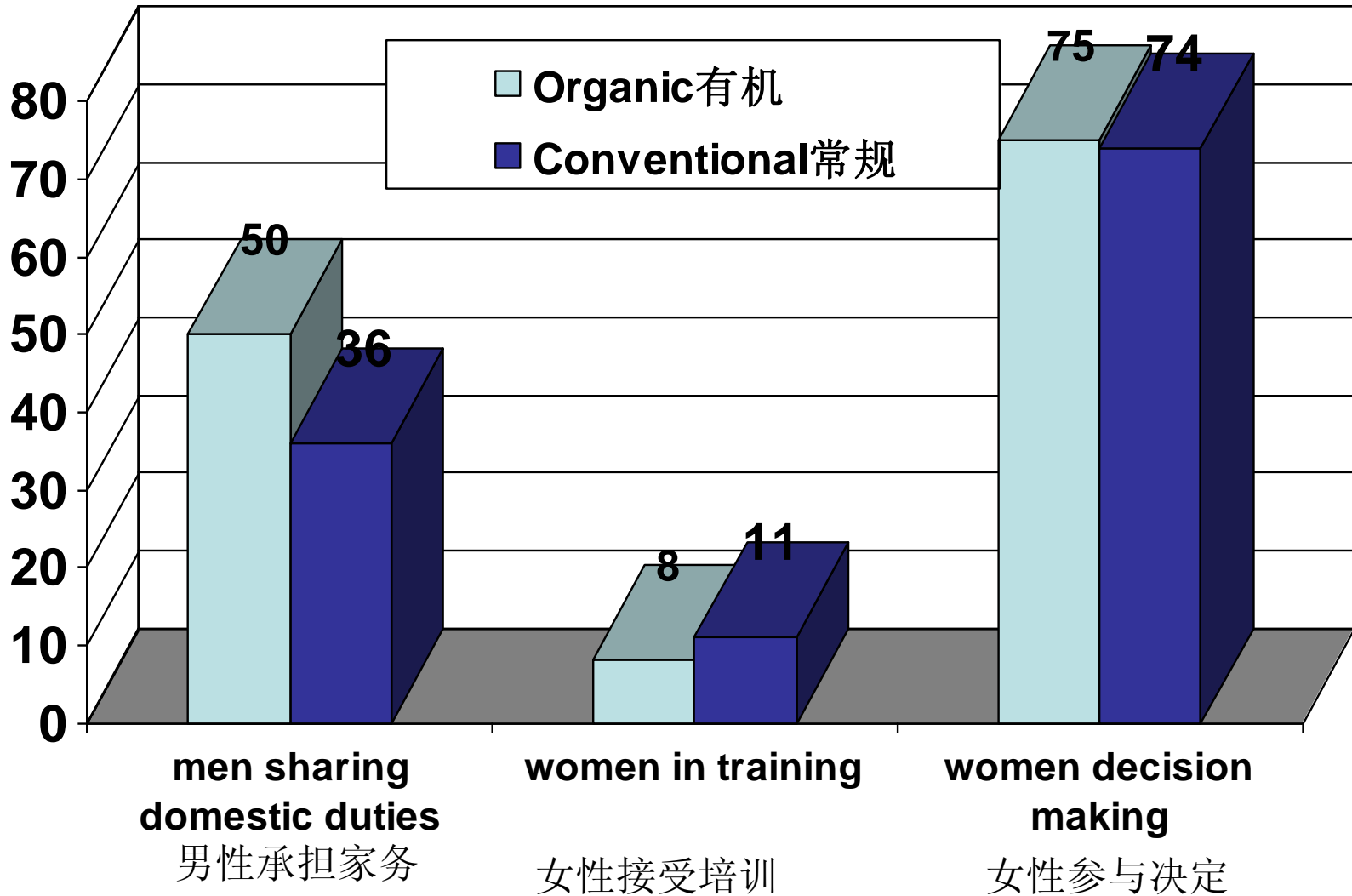


# Labour use by Households in Wanzai (days/ha)

万载调查农户的劳力投入（天/公顷）

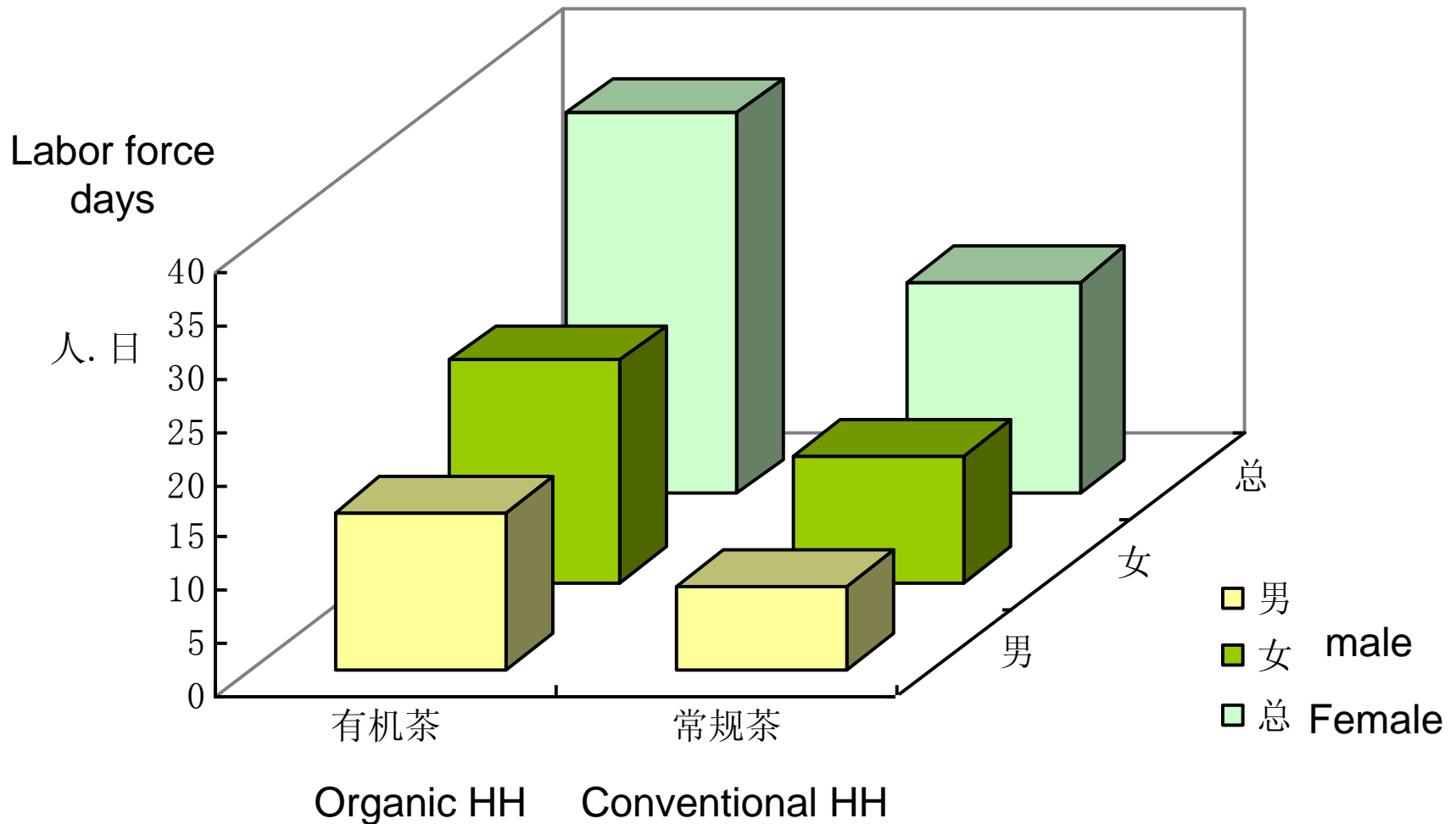


# Gender equality in Households in Wanzai, 万载调查农民家庭中妇女的地位%



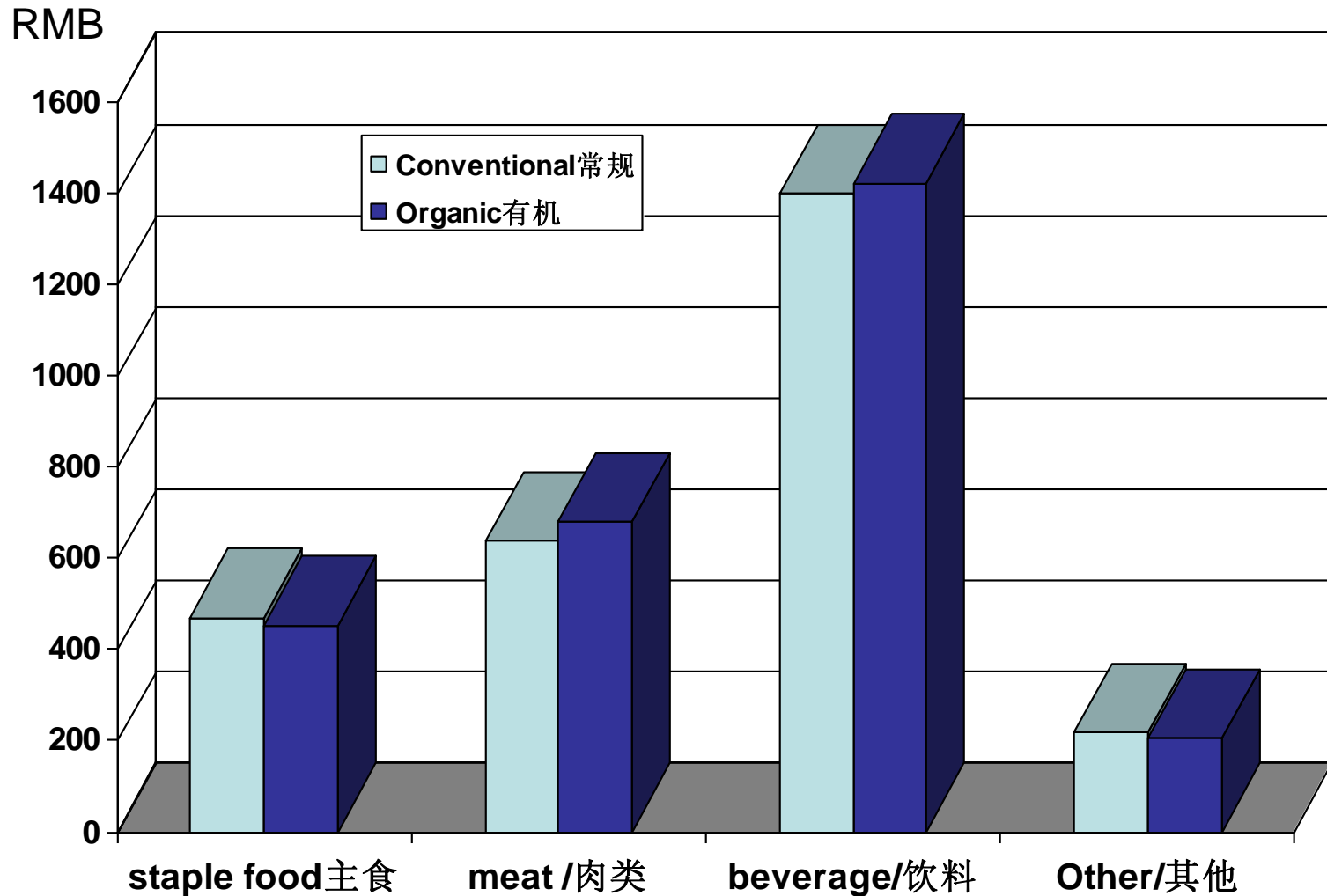
# The tea Labor force comparison between Organic and Conventional HH in Wuyuan

## 婺源有机与常规农户茶生产年投入劳动力比较



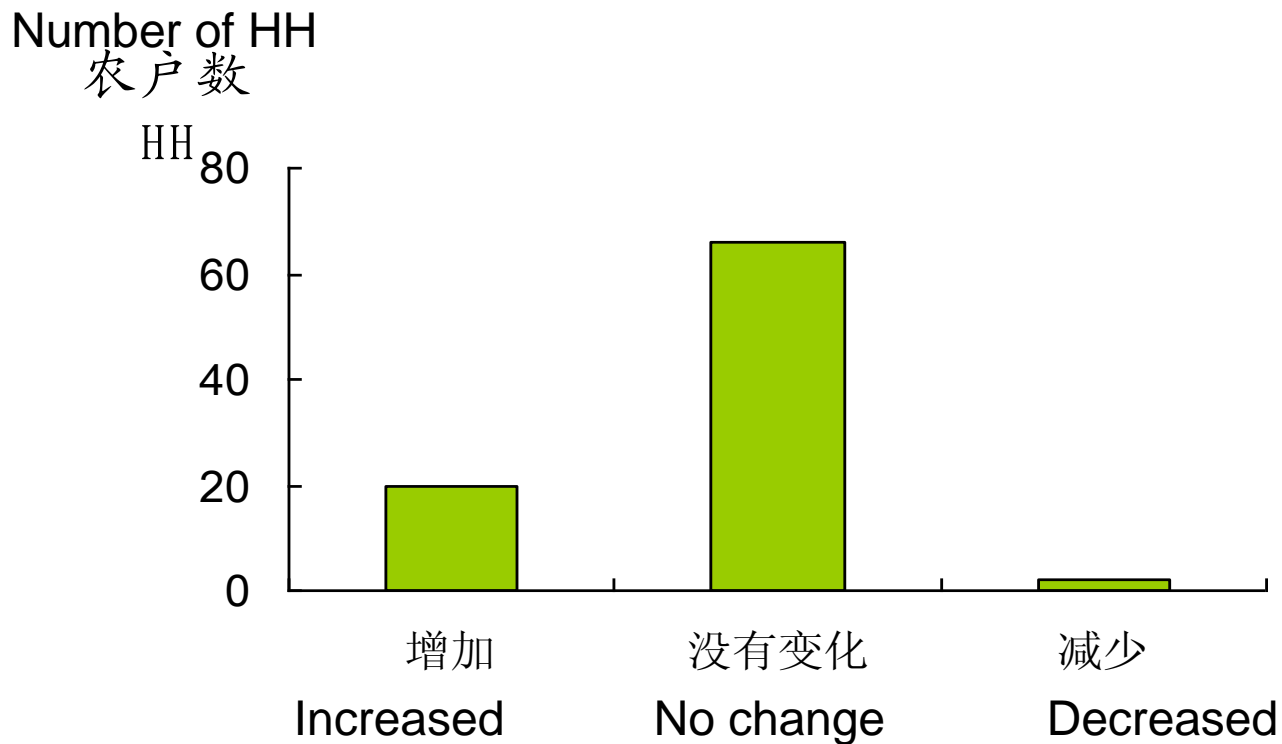
# Food purchase by Households in Wanzai

## 万载调查农户的食品消费



# Food purchase changes by Wuyuan HH after OA

## 婺源调查农户从事有机农业后家庭购买食物量变化情况



# Organic Agriculture and Global Partnership

## 建立全球合作伙伴关系

- The global market links established/建立全球市场联系
- Attracting more investment/吸引更多投资
- Contracting ensure the confidence in smallholder farmers/与小农户建立合同保障
- Labour paid work locally to the benefit of women, but difficult to slow down urban migration significantly at present. /提供更多的当地工作机会给妇女，但现在很难减少外出务工



Transplanting strawberries in paddy fields for export of freeze dried berries to the US market 为了出口冷冻干浆果到美国市场，把草莓移栽到稻田。



## 4、conclusion结论

效益	经济效益	环境效益	社会效益
万载	+++	+++	+++
婺源	+	+	++

- 1) 从经济收入来看，有机生产和常规生产之间存在显著差别；但由于有机农业的收入比例占家庭收入比例太小，农户整体的家庭收入差别不显著。
- 2) 有机农业使农户更多地接触有机农业方面的知识，增强了环保意识，农作生产中采取更多的生态农业技术措施，有利于环境。
- 3) 有机生产劳动力投入更多，妇女劳动力比例高，有利于农村剩余劳动力的就地转移以及妇女地位的提高。
- 4) 可以促进农产品贸易