From Innovation (SHIFT) to Adaptation (shift)

—— The Share-holding Integrated Forestry Tenure (SHIFT) System in Sanming, China

Y. Song, G. Wang, W. Burch, M. Rechlin

Yale University

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Geographic Distribution of Yale-China Programs

Why Research on SHIFT ?

- **Why SHIFT** – representative of social forestry trends
- **Why Sanming** – important community forestry and timber forestry regions in South
- **Why Fujian** – comparatively & competitively over others (North, Taiwan and beyond)
- **Why Yale** – one of the world innovator & opinion leader of social forestry
- **Why Now** - the past trends & trends leading to future

The SHIFT Studies

- **Background - The SHIFT System**
- **Methods and Approaches**
- **Share Holding (SH) & Forestry Tenure (FT)**
- **Case & Hypothesis**
- **Research & Summary**
- **What's the Next?**


אור ותמים
LUX ET VERITAS

耶鲁 & SHIFT

- Validity —— 求实
- Originality—创新

Map of China with study area indicated. Source: map of People's Republic of China (1993).

Timber forest

Economic forest

Ecological forest

The *oligopoly* of certain tree species and the overall **lack of diversity** pose increasing challenges to ecological health of Sanming forests.

Timber Forest Type	*Area in hectares*	*Percent (%)*
Chinese Fir	384,216	**31**
Masson Pine	557,734	**45**
Broad-Leafed	284,117	**23**

- To better protect relatively rare species, forestry departments classified the 1,636,145 hectares community-owned forest into three categories.

Classification	*Area hectares*	*Percent (%)*
Timber Forest	1,226,126	**75**
Ecological Forest	317,293	**19**
Economic Forest	92,726	**6**

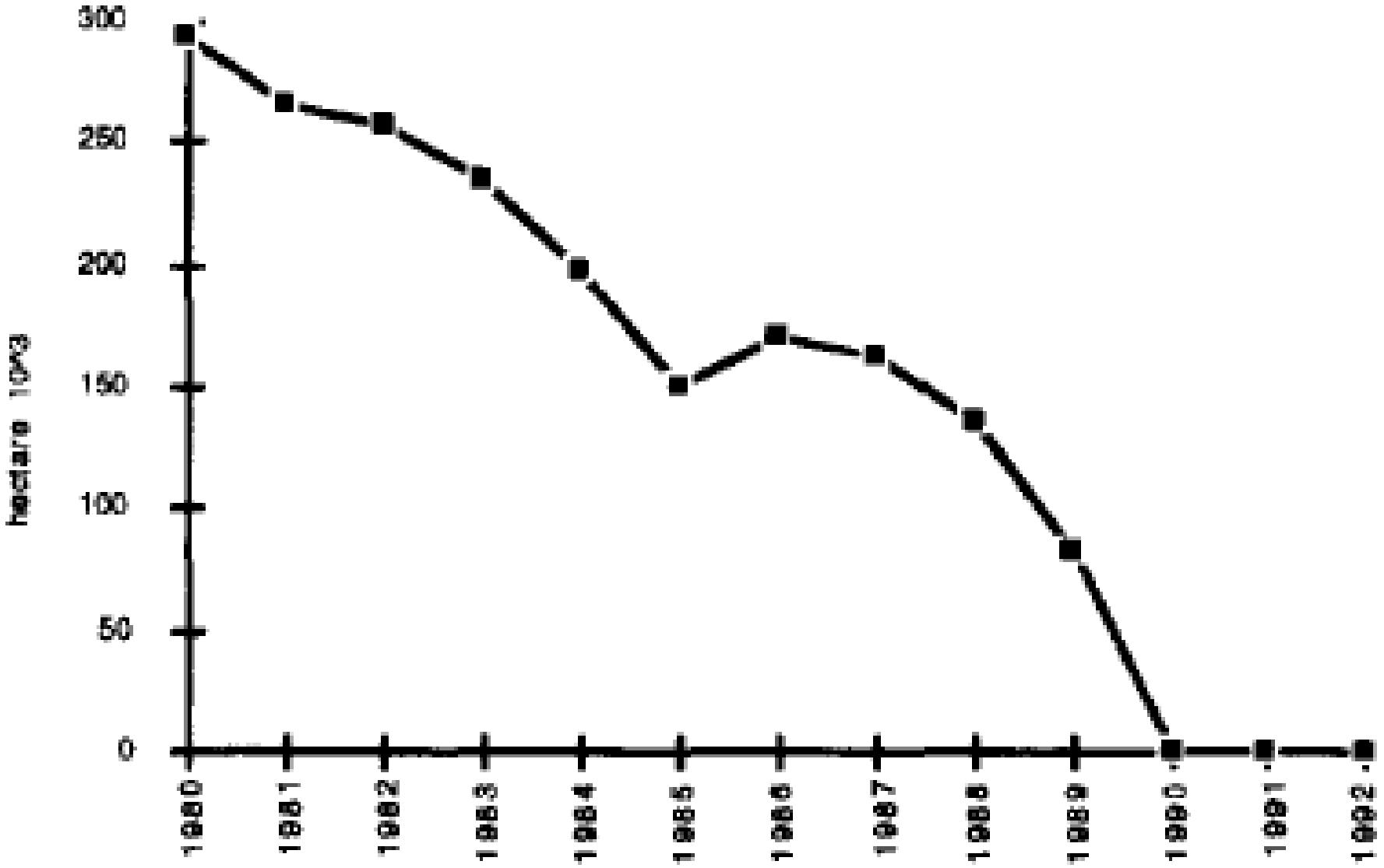

Fig. 4. Decline of afforestable bare land in Sanming (Sanming Forestry Statistics, 1980–1993).

Background

- **Post People's Commune**

  1980-1983

- **Forestry Property Rights**

  Share Holding (**SH**) System

- **Forestry Management**

  Forestry Tenure (**FT**) Arrangement

- **Integrated Togethere** (I)

  SH ~I~FT = SHIFT

Background

- **What is the SHIFT System?**

A Private-LIKE community forest property rights experiment (SH) with a **Capitalist-LIKE** forestry tenure arrangements (FT) initiated in **Sanming** Prefecture, Fujian Province, **China** in the early 1980s.

Background

The SHIFT Development

Innovation 1980 - 1992

Adaptation 1993 - 2001

Reformation 2002-

Background

Key FACTORS :

Sustainability – property rights

Productivity – management rights

Equity – foresters rights

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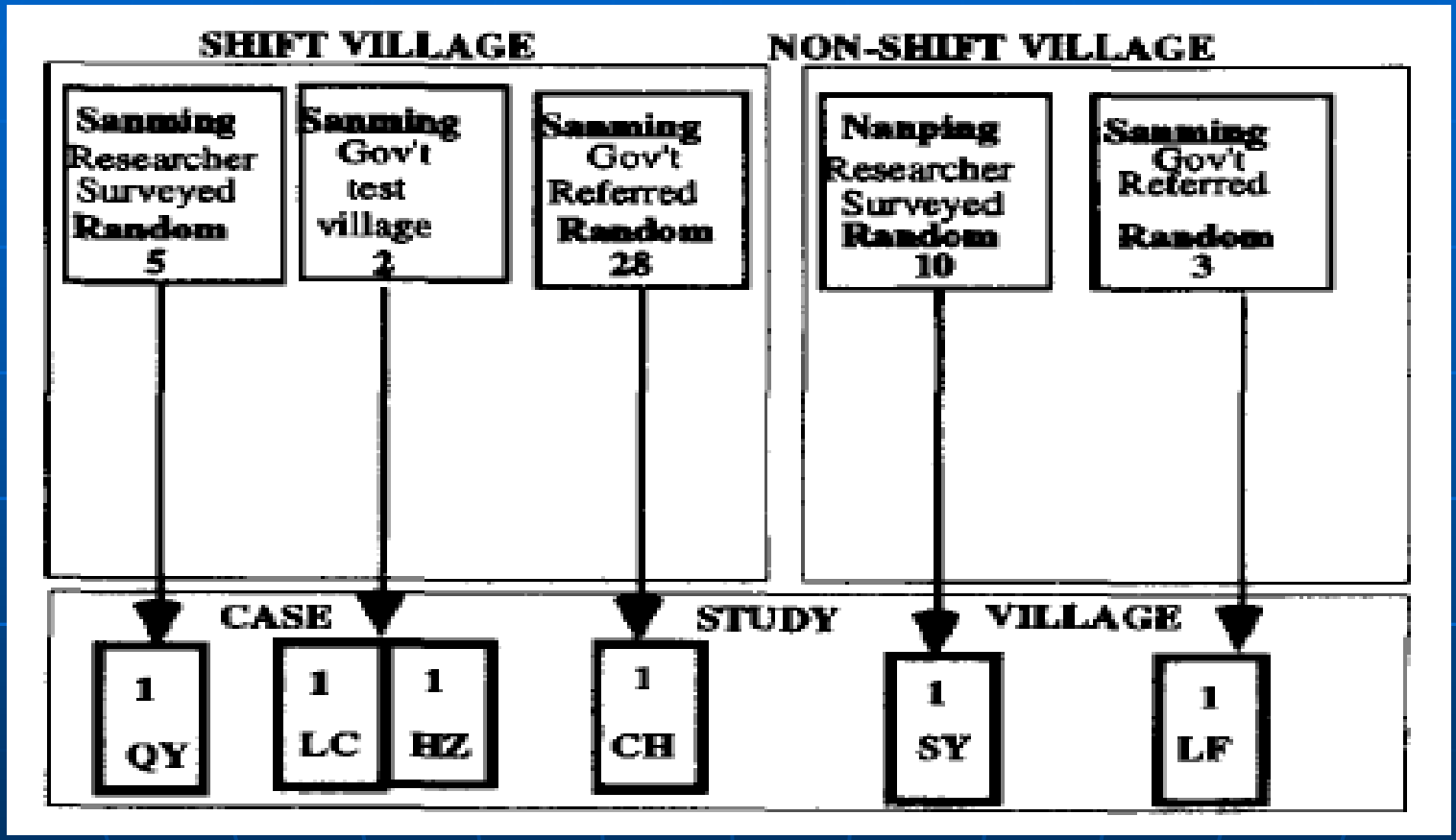
Methods & Approaches

Method – Sample Selection



6 sample villages (either SHIFT treated and non-SHIFT treated) were chosen based on government recommendation and random selection

Villages Sampled during the 1991 Study

Village	Sanming Prefecture	SHIFT System
Longci	Yes	Yes
Huangzhuang	Yes	Yes
Chonghou	Yes	Yes
Qingyao	Yes	Yes
Lifang	Yes	No
Shangyang	No	No

Villages Sampled during the 2001 Study*

Village	Sanming Prefecture	SHIFT System	Original / New
Longci	Yes	Yes	Original
Huangzhuang	Yes	Yes	Original
Chonghou	Yes	Yes	Original
Qingyao	Yes	Yes	Original
Songkou	Yes	Yes	New
Kaotang	No	No	New

The study replaced two original villages with two new ones that represented significant recent innovation of SHIFT.

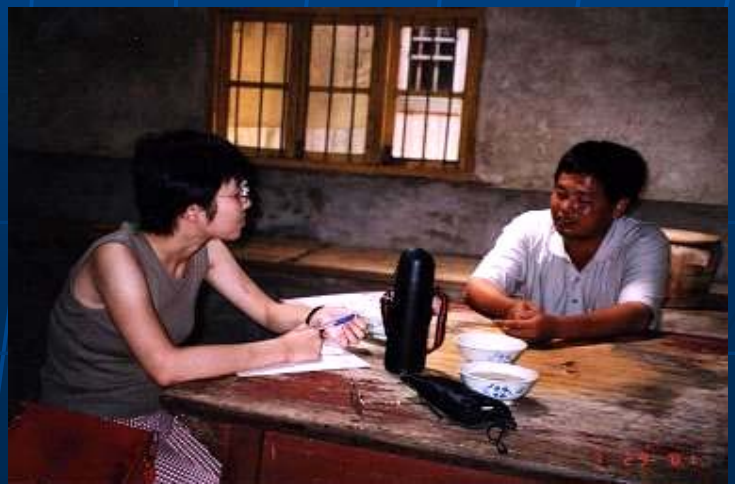
Method – Data

Variable		Indicator
SIFB	Forest biomass increment	Net forest biomass change
AFBL	Afforestable bare land	Forestland efficiency
RFA	Size of replanted area	Efficiency of regeneration
Timber Harvest	Volume of timber harvest	Commercial log productivity
Income	Average villager income	Financial status
Income Range	The gap between the rich and poor in village scale	Social and equity status

Data Source

- **Diversified Sources** – Local forestry station, county, prefecture forestry committee, village committee, on-site survey, interview from villagers.

- **Valid Ground Truthing**- Data and investigation consistency, reliability and validity.



Approaches

- **6** randomly selected **villages**, and each **12 , total 72 households** from each sampling village
- data, **questionnaires** and **interview schedule**

Questionnaire & Interview Schedule

- **Questionnaire**:
  forms designed
  for interviewees

- **Interview Schedule**:
  systematic information designed for interviewers

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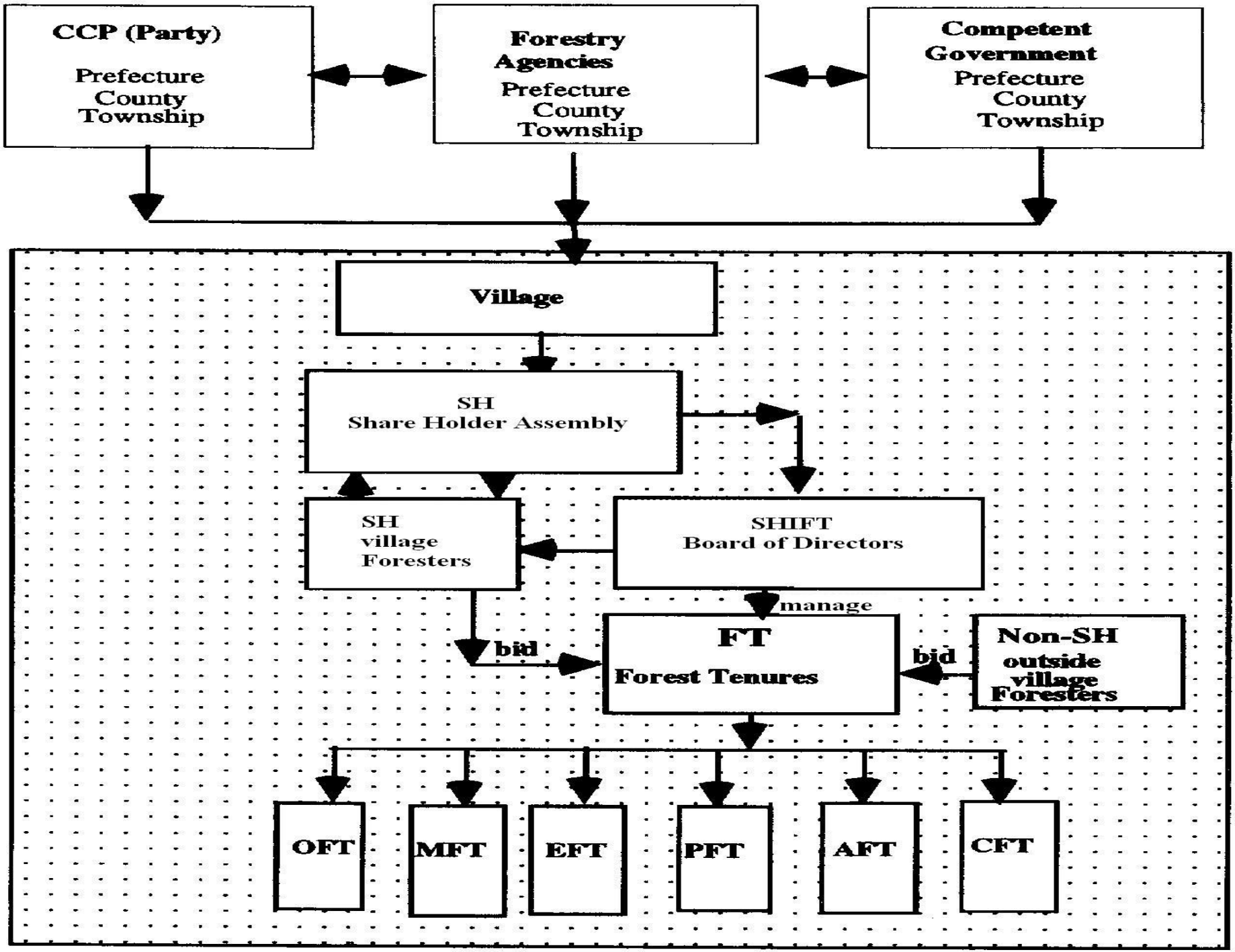
Share Holding (SH) & Forestry Tenure (FT)


CCP (Party)
Prefecture
County
Township
Forestry Agencies
Prefecture
County
Township
Competent Government
Prefecture
County
Township
Village
SH
Share Holder Assembly
SH
village
Foresters
SHIFT
Board of Directors
manage
bid
FT
Forest Tenures
bid
Non-SH
outside
village
Foresters
OFT
MFT
EFT
PFT
AFT
CFT

Types of Forestry Tenure

Existed

- **OFT**: Output guaranteed forest tenure
- **DFT**: Deposit forest tenure
- **FLT**: Forestland leasing tenure
- **MHT**: Multi-households tenure
- **HFT**: Household forest tenure
- **FMT**: Forest maintenance tenure

Re-dentified

- **HRF**: Household reserved forest

New

- **OST**: Ownership splitting tenure

Type	*Tennant Rights*	*Tennant Responsibilities*	*Tenure Term (years)*	*2001 Percent*	*Forest Type*
Output guaranteed forest tenure (OFT)	Land use, ownership of trees planted during tenure	Revenue sharing, maintenance and protection	25-30	2	Afforestation of bare land or premature forests
Maintenance Forest Tenure (MFT)	Contract for maintenance, limited rights and fuelwood harvest	Maintenance and protection	8-12	30	Ecological forests, near mature timber forests, forests of poor quality and marketability
Forestland leasing Tenure (FLT)	Land use, ownership of trees planted during tenure	Land use fee, harvest sharing, maintenance and protection	25-30	2	Reforestation of plantations
Household Reserved Forest (HRF)	Land use, long term ownership of timber and non-timber forest resources	Forest maintenance and protection	50+	15	Household forests for private usage

Type	*Tennant Rights*	*Tennant Responsibilities*	*Tenure Term (years)*	*2001 Percent*	*Forest Type*
Deposit Forest Tenure (DFT)	Land use, ownership of existing trees	Down payment, harvest sharing, maintenance and protection	25-30	5	Pre-mature forests
Multi-household Forest Tenure (MHT)	Land use, ownership of trees planted during tenure	Revenue sharing, maintenance and protection	25-30	20	Reforestation of plantations
Household Forest Tenure (HFT)	Land use, ownership of existing trees	Revenue sharing, maintenance and protection	25-30	25	Economic forests: tea, fruit trees and bamboo
Ownership Splitting Tenure (OST)	Land use, and share of timber revenues	Revenue and obligation sharing with co-tenants and village	7-10	1	Pre-mature forests

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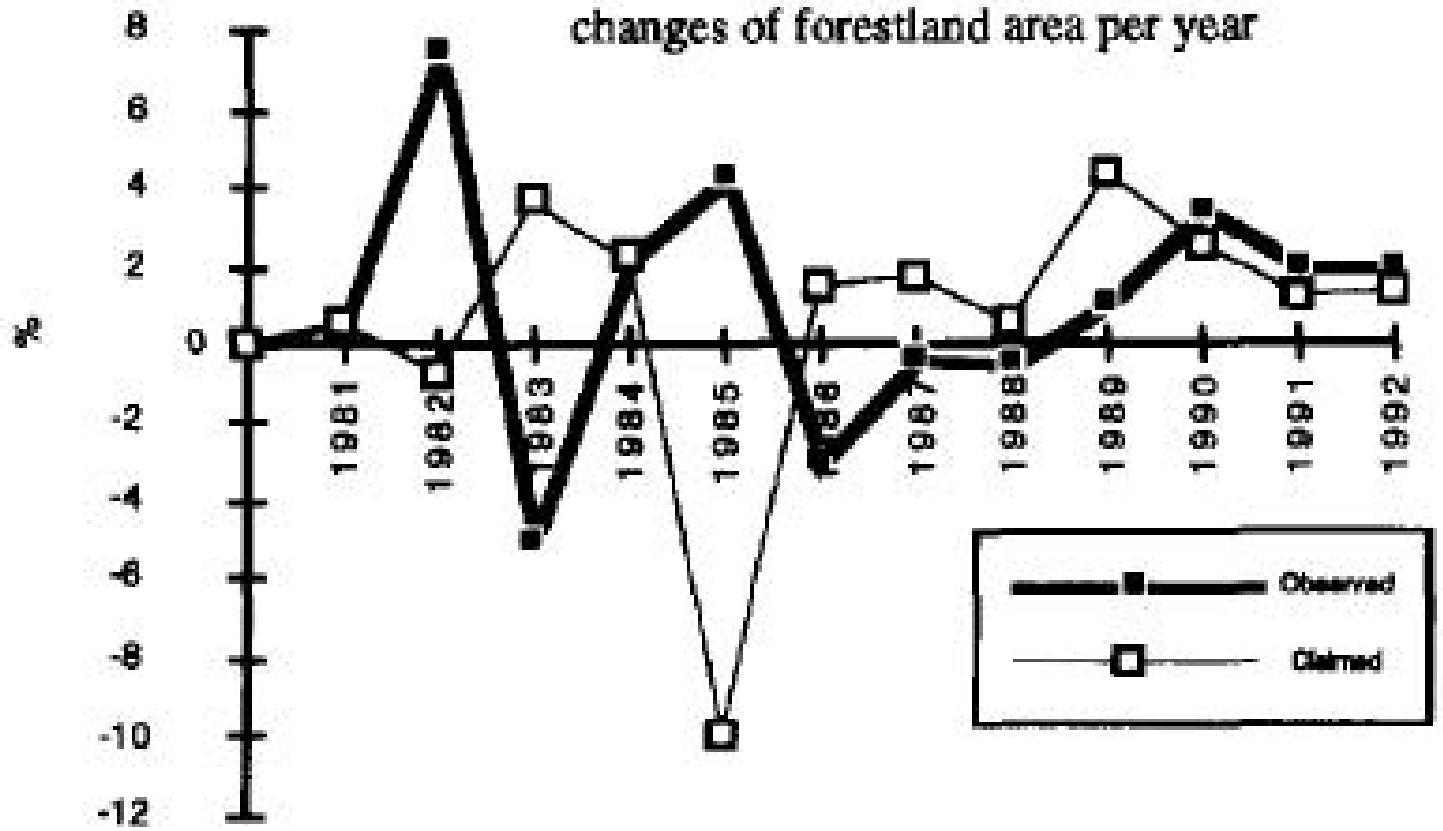
Case Studies &
Testable Hypothesis



Annual percentage changes in forest land area (ha) in Sanming. The observed data were verified through field research and claimed data collected from Sanming forestry data (SFC).

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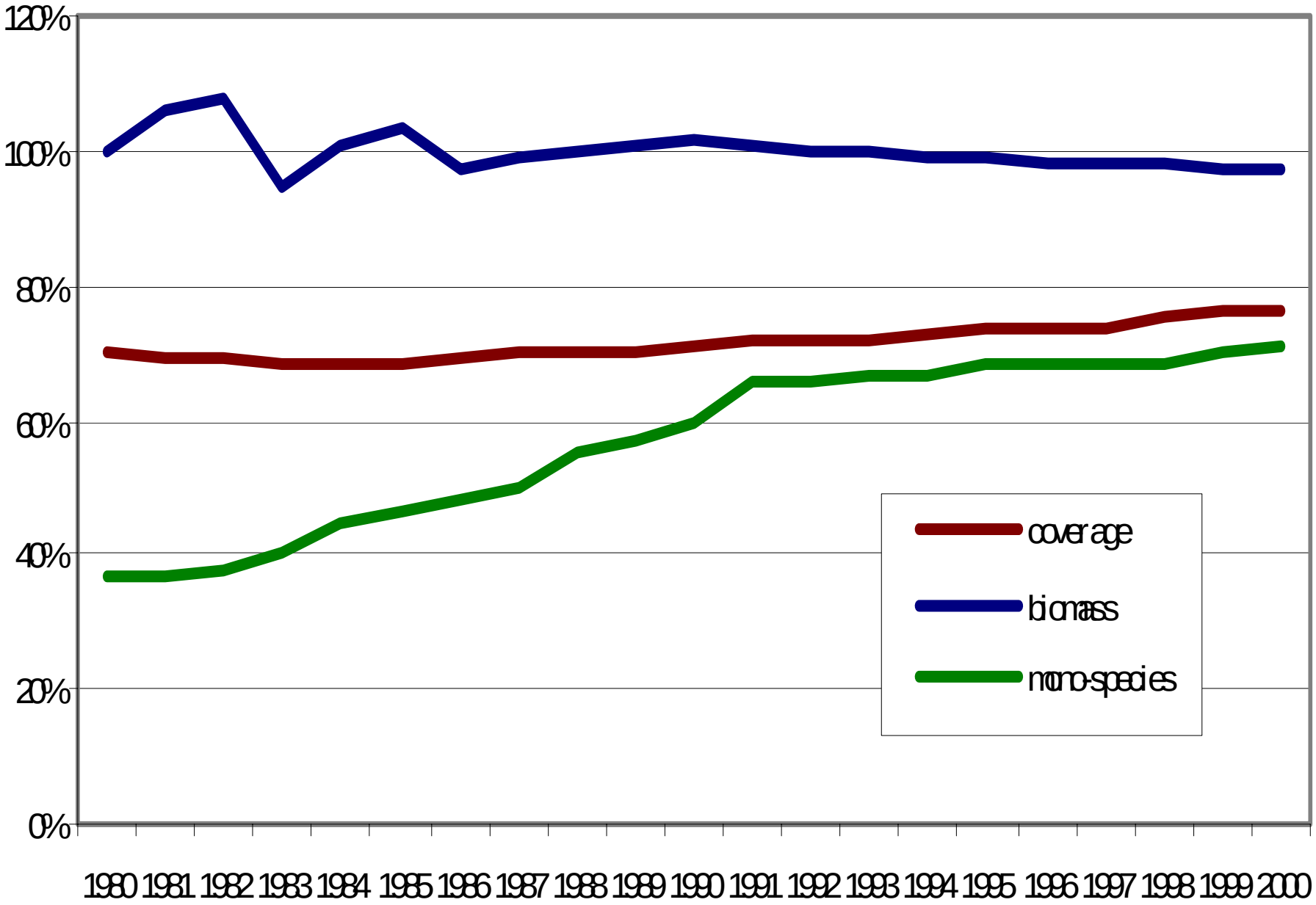
Research & Summary

Sustainability

- Forest coverage increased close to the upper limit
- Afforestable bare land was almost eliminated
- Forest biomass decreased by 4% since 1990
- Forest diversification reduced, and new measures adopted


120%
100%
80%
60%
40%
20%
0%
1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000
coverage
biomass
mono-species

Productivity

- Forest productivity has decreased as a result of the decrease of harvesting and biomass stock;
- Overall productivity has increased with major forestry-related income from non-timber products;
- The average income of both tenure contractors and other villagers increased.

Root Carving

Paper Making

Bamboo Mat Making

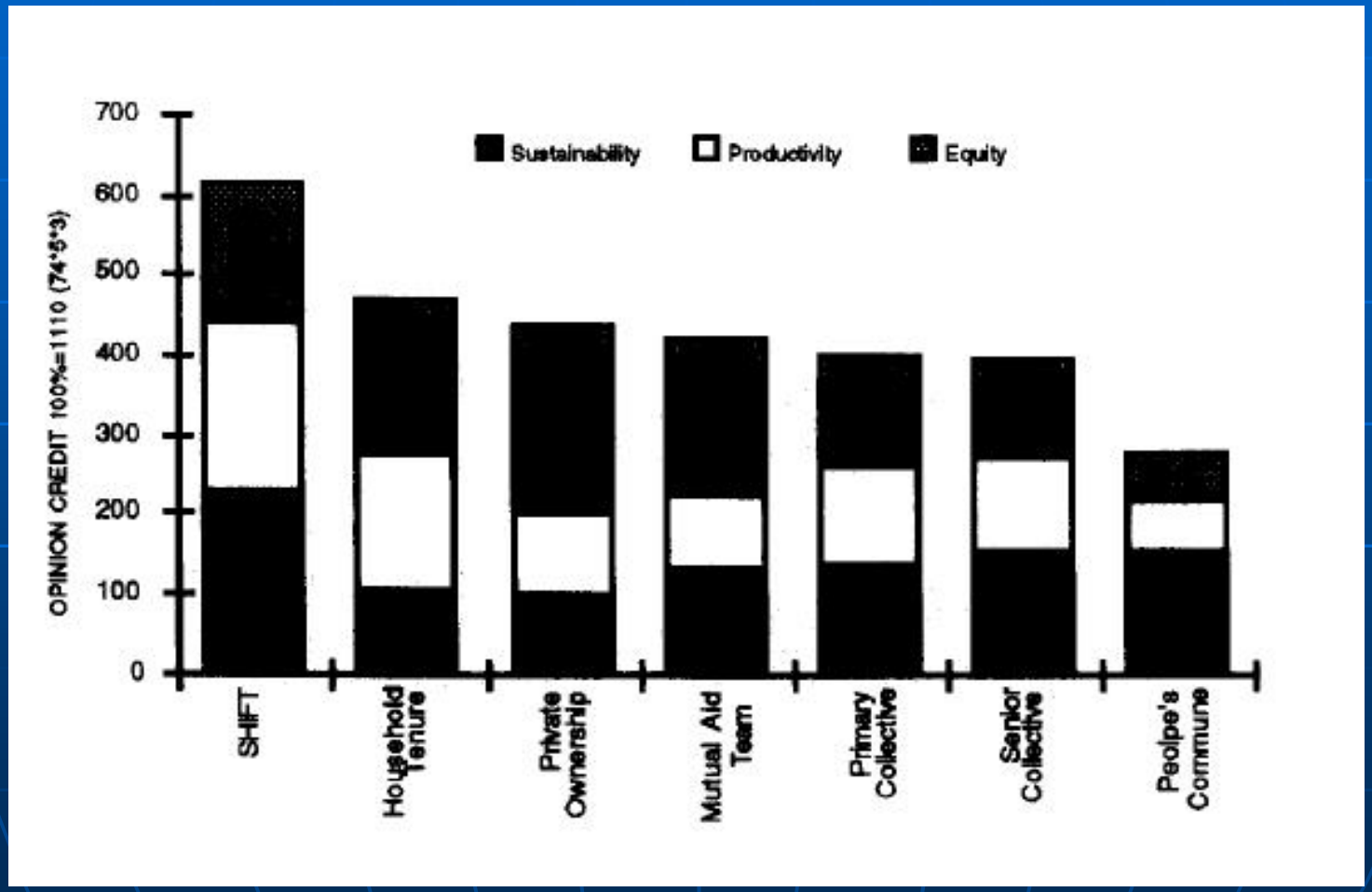
Equity

- Equity (represented by the distribution of forestry income) has dropped over the last decade mainly due to big overheads **and land use *oligopolies*.**
- Villagers' living standard and life quality have improved.
- Shareholders stopped receiving cash dividends since 1997.

Villager Satisfaction

- The income gap between tenure holders and non-tenure holders was significantly enlarged
- A comparison study between the year 1990 and 2000 showed the general perception of stronger unequal income distribution, slightly decreasing forest resource sustainability and even forest productivity

Villagers' preferences for SHIFT and other systems in Sanming (1991)



Villagers' preferences for SHIFT and other systems in Sanming (2001)

	Sustainability	Productivity	Equity	System-Total
SHIFT-2001	216	189	125	**530**
SHIFT-1991	223	218	174	**615**
Household Tenure	102	174	193	**469**
People's Commune	149	72	56	**277**
Senior Collectives	151	122	123	**396**
Primary Collectives	131	133	135	**399**
Mutual Aid Team	128	98	198	**424**
Private-owned	97	103	283	**483**

Environmental Factors	Innovation Phase: 1983-1991	Adaptive Phase: 1992-2003
Social Organizational\Institutional Environment	· Diversity of region's population · Long- term interest of Central Government · Experiments in 'private-like' economic organization and legislative opportunities · Traditional forestry practices of low scale, energy and capital grass-roots · Opinioned leadership to adopt SHIFT · 'Trainability' of the innovation established its possible utility in Sanming	· The legislative rules change with 1998 Village Committee Organization Act · Rules regulating FT changed (open bidding on forest product; tenure system expanded and responsibilities reassigned; monopolization of tenure contracts; HT revived and privatized) · SHIFT set practice in electoral governance and incentives encouraged market-like behavior
Economic Environment	· A poor district dependent upon primary production and ready for any change that promised improvement · Mountainous terrain impeded transportation and other economic activities · Already familiar with appropriate enterprise scale and operation · SH provided incentives for reforestation and protection of the established forest · Timber price fluctuation was permitted	· Market driven economic system · Significant rise in income for local households · Increasing income gap · Outside contractors win most bid · Household private management of forest increased · Increase in overall value of harvested forest products due to diversification of

Environmental Factors	Innovation Phase: 1983-1991	Adaptive Phase: 1992-2003
Cultural Environment	· Cultural diversity and history of risk taking · High proportion of out migrants reflects tradition of seeking opportunity · Press of limited resources encouraged high degree of entrepreneurial attitude · Problems of managing a 'common' resource were perceived as needing reform if the forest resource was to remain as means of economic support	· Villagers still value SHIFT as the preferred forest system though there is some decline in preference level · Value shift from common to private ownership · Value shift from production orientation to consumption orientation · The traditional regional entrepreneurial interest is manifest in discovering greater economic opportunities in non-timber forest products-with nature-based tourism a likely economic activity in the near future
Biophysical Environment	· Favorable soils and climate for growing forests · Large proportion of barren land available for reforestation (475,000 ha) · Overgrazing by domestic livestock	· No large afforestable bare lands exist, thus Sanming's forest coverage has approached its carrying capacity. · The high growth of biomass at the outset of the SHIFT has stabilized

Challenges

- **Property Rights**

  sustainability

- **Management Efficiency**

  productivity

- **Benefit Distribution**

  equity

Yale’s Research on shifting

What’s the Next ?

From SHIFT to shift

- **SHIFT** was initiated as an innovative rural development program of “private like” forest management and has now experienced the “innovation phase” and “adaptive phase”.
- **shift** is an ongoing long-term process hinging on flexibility and the ability to meet the changing ecological, social, economic, political, and technological conditions.

From shift to shifting

- What we have learned from the **SHIFT** innovation and **shift** adaptiona so far?
- How can we better study from **shift** and **shifting** from now on?

Comparative Studies

- **Regionally** with other Southern regions
- **Domestically** with northerny & Taiwanese forestry
- **Globally** with other countries and beyond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Thank you!