Ecology of the Chinese Peasant Household

The House-Field-Town Nexus and its Decline in the Qing

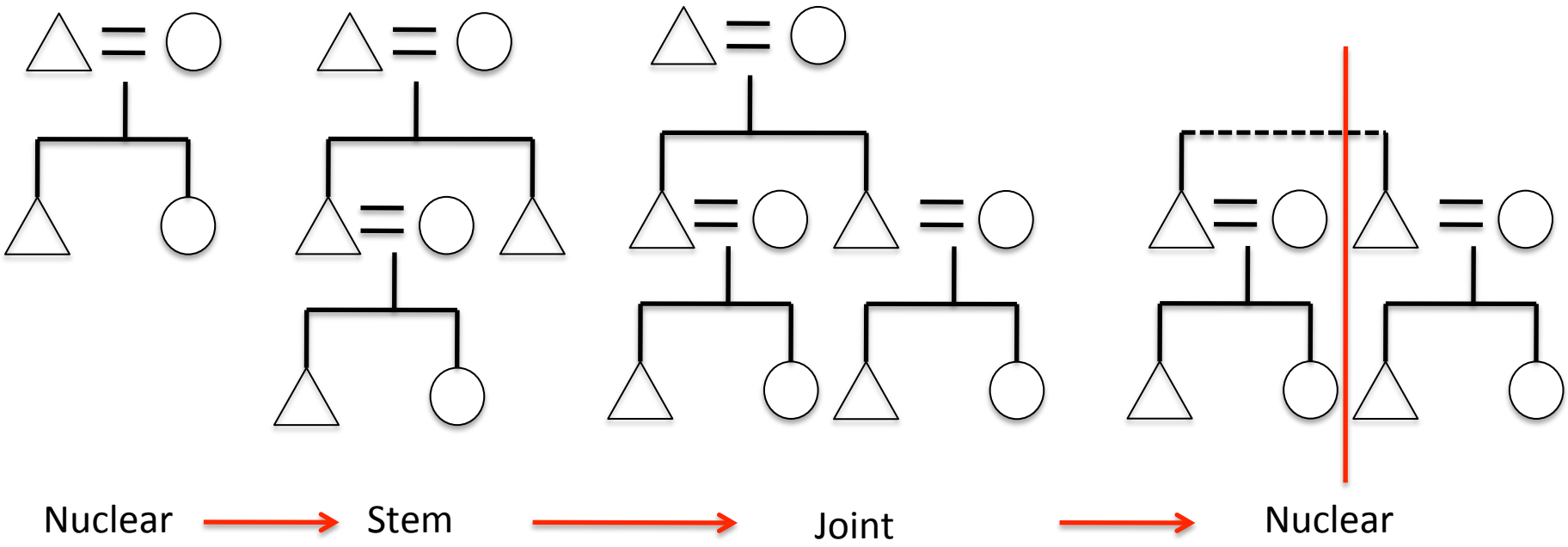
An accompaniment to chapter 3 of *An Ecohistory of People's China*

Stevan Harrell

Revised for Environment and Society in China

5 April 2016

The Household Developmental Cycle



The House-Field-Town Nexus

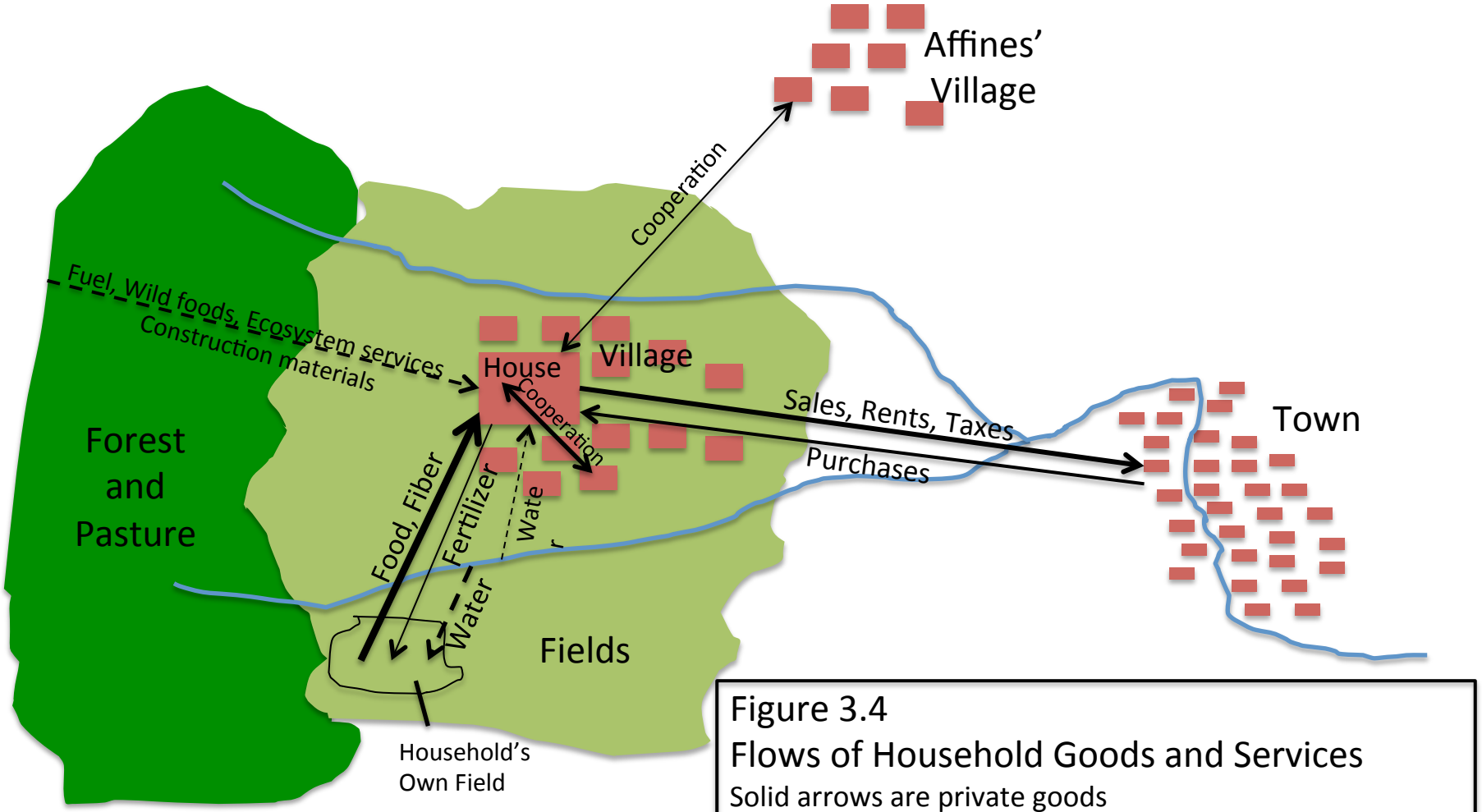


Figure 3.4
Flows of Household Goods and Services
Solid arrows are private goods
Dashed arrows are common pool goods
Importance of flows is roughly proportional to weights of arrows.

The house-field-town nexus

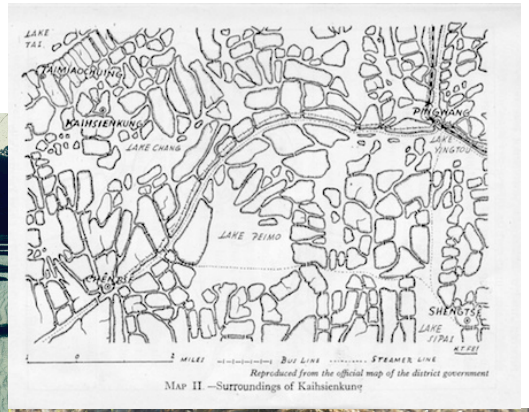
The house-field-town nexus: materials and ventilation

The house-field-town nexus: House plans and spirits

The house-field-town nexus: House plans and household structure

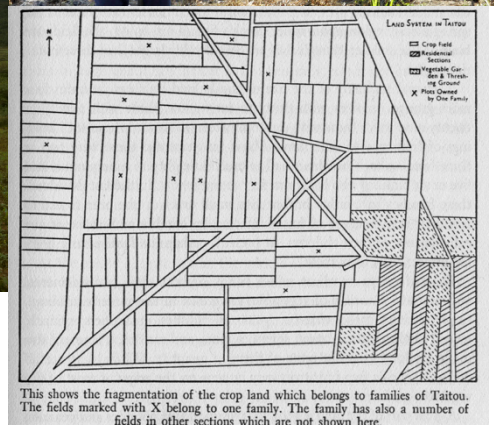
The house-field-town nexus: The Village as an agglomeration of houses with obligations of reciprocity

The house-field-town nexus



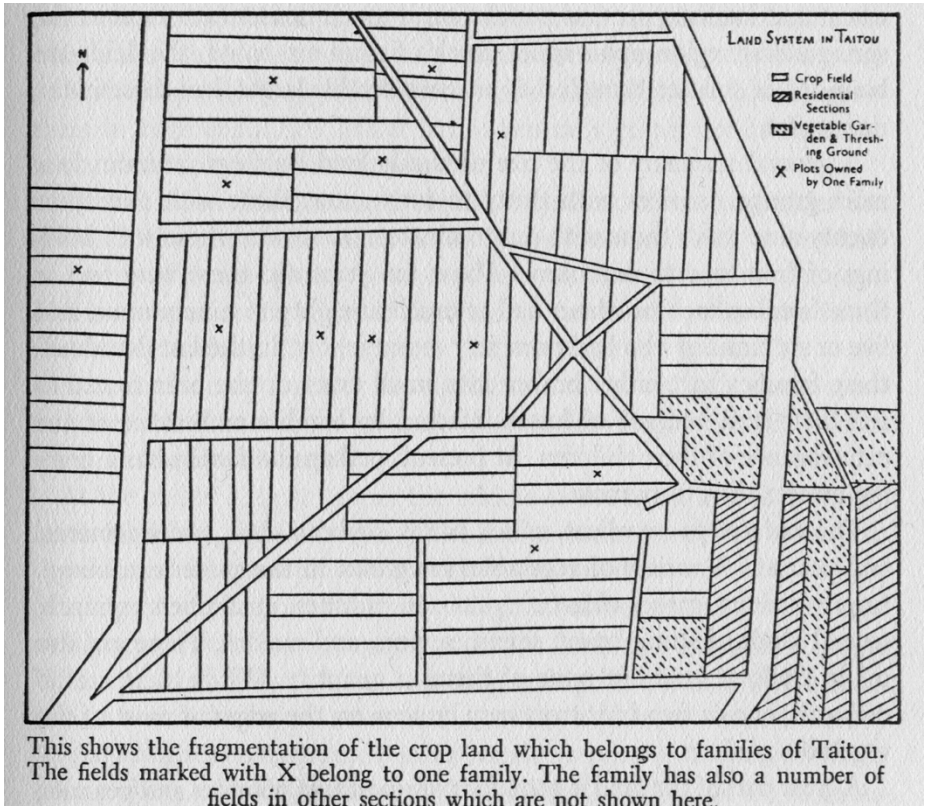
Reproduced from the official map of the district government

MAP II.—Surroundings of Kaihsienkung



This shows the fragmentation of the crop land which belongs to families of Taitou. The fields marked with X belong to one family. The family has also a number of fields in other sections which are not shown here.

The house-field-town nexus: Private resources



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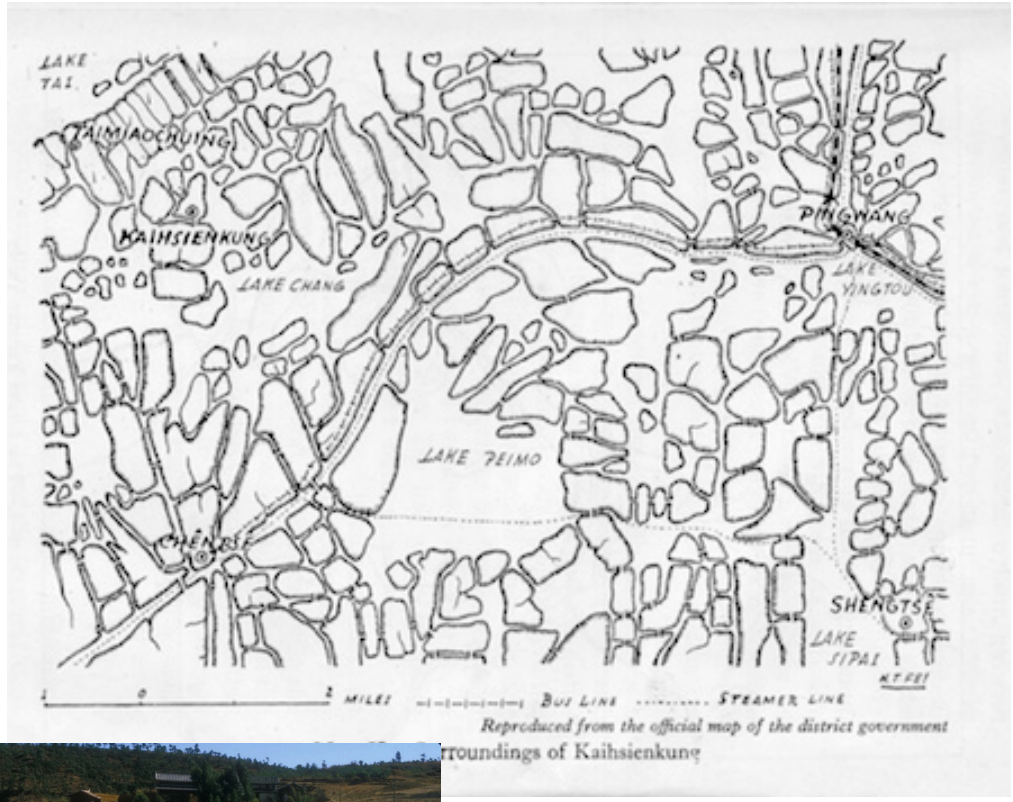
The house-field-town nexus: Resource Commons



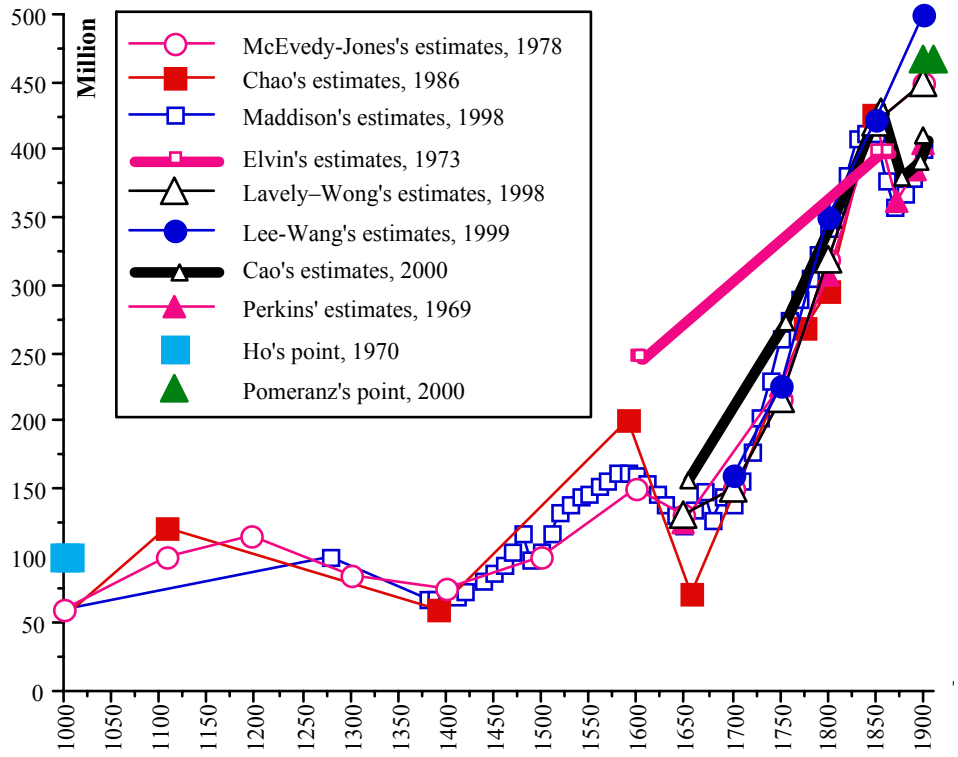
Reproduced from the official map of the district government
roundings of Kaihsienkung

The house-field-town nexus

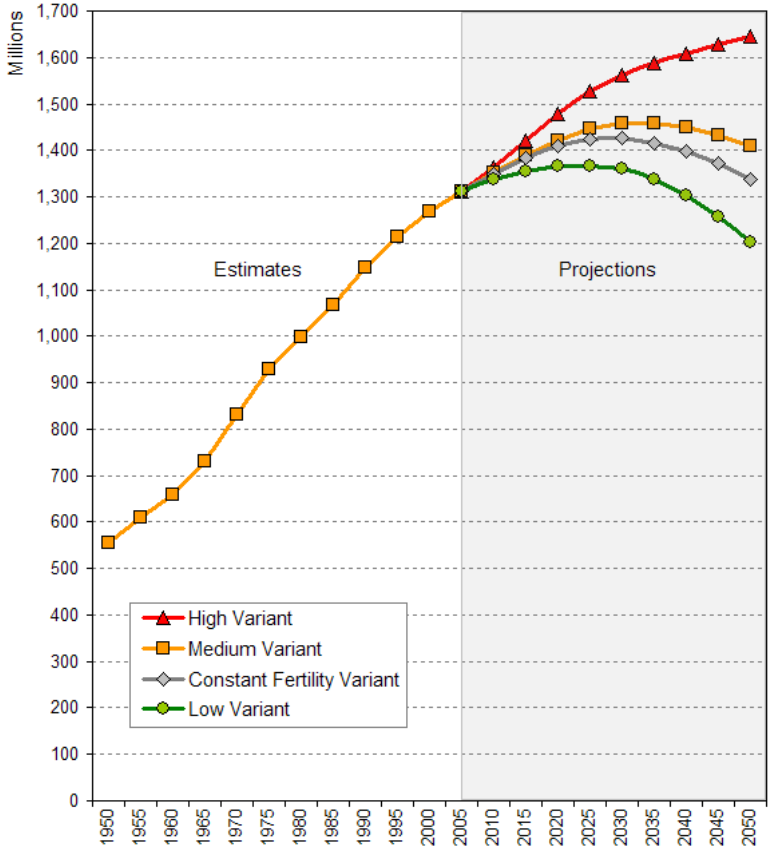
Buffers or Guarantors

- Infrastructure: mostly waterworks
- Institutions
  - Kin groups
  - Irrigation Associations
  - Temples
- Beliefs and values: See descriptions in Fei, Yang, Leonard, etc.
  - Frugality
  - Recycling
  - Generational Continuity
  - Within-community Reciprocity
- Ecological buffers
  - Wetlands
  - Forests: Recall Elvin and Marks
  - Fallow land
  - Ungrazed pasture

Population Growth in the Qing and PRC



Kent G. Deng, Unveiling China's true population statistics for the pre-modern era from census data. *Population Review* 43 (2), 2004



www.chinaprofile.com

Flows in the house-field-town nexus

Rough balance
Guarantors
- Infrastructure
- Institutions
- Values
- Eco. buffers

Energy

food, feed, clothing, construction mat.

fertilizers

sales, rents, taxes

purchases

(s+r+t)-p=exploitation
Within bounds=moral economy

Slow variable change in the house-field-town nexus

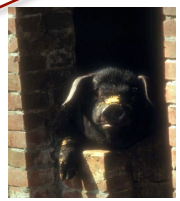
Rough balance
Guarantors
- Infrastructure
- Institutions
- Values
- Eco. buffers

Energy

food, feed, clothing, construction mat.

fertilizers

Depletes
- Topsoil
- Forest biomass
- Ground water
- Game animals, etc



sales, rents, taxes

purchases

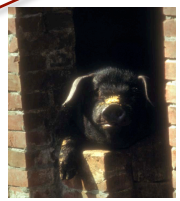
(s+r+t)-p=exploitation

New World crops in hilly areas as slow variables

Energy

food, feed, clothing, construction mat.

fertilizers



Increases
- Fertility
- Population
- Area Planted

Depletes
- Topsoil
- Forest biomass
- Wetland reserves

Weakens Guarantors
- Infrastructure
- Institutions
- Values
- Eco. buffers

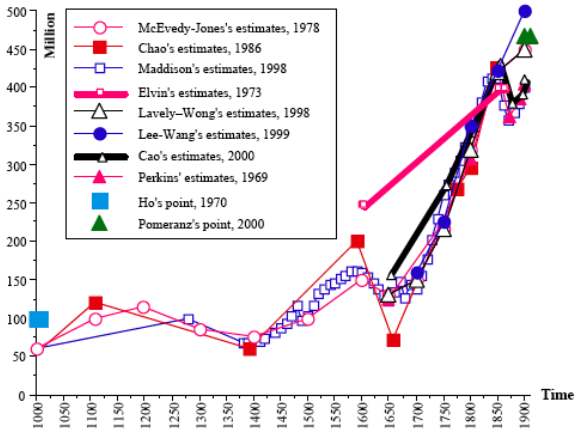
Population explosion as slow variable

Energy

food, feed, clothing, construction mat.

fertilizers

Figure 1b. Messy Situation of Estimates and Guestimates, 1000–1911



Increases
- Fertility
- Population
- Area Planted

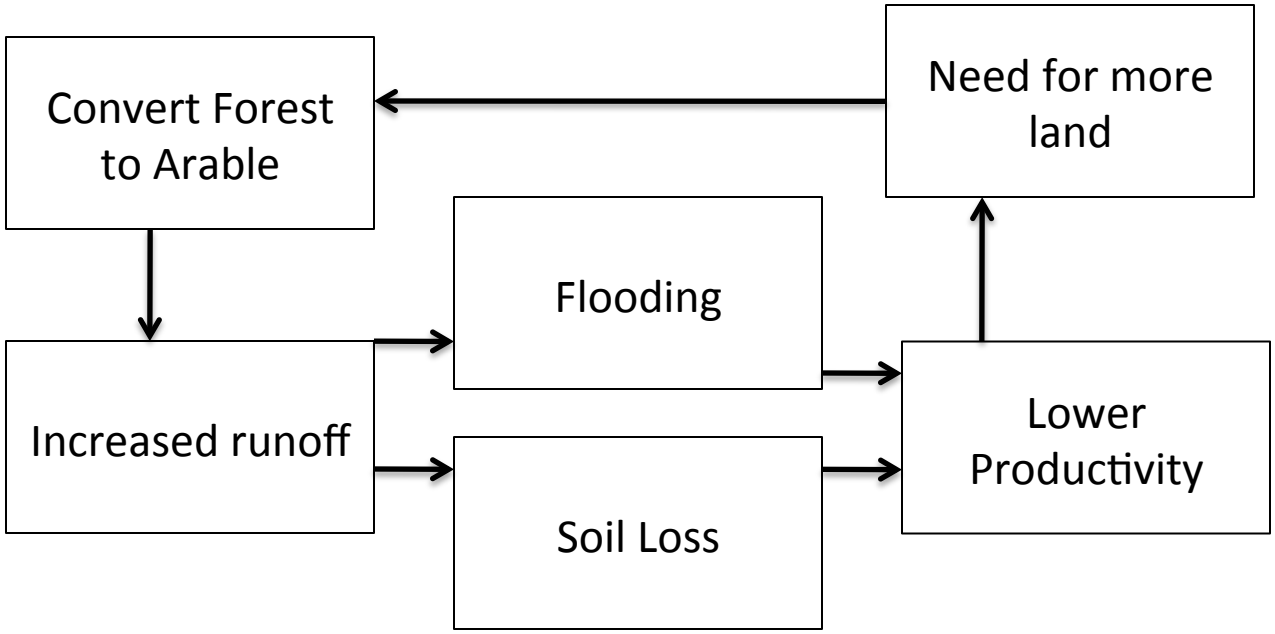
Depletes
- Topsoil
- Forest biomass
- Wetland reserves

Weakens guarantors
- Infrastructure maintenance
- Adaptability of institutions

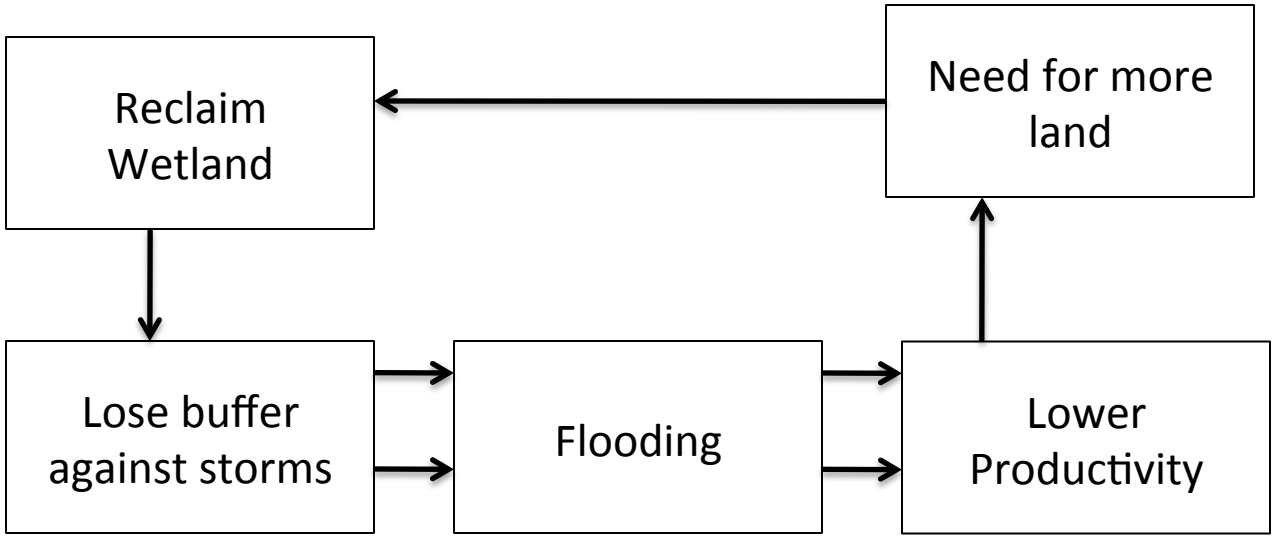
Summary of Loss of Ecosystem Resilience in the Qing Dynasty

INSTITUTIONS	Limited adaptation to new environments Reaching capacity in rule-making and adjudication Migration and refugees disturb composition
INFRASTRUCTURE	Strain increased More locked in Maintenance deteriorates
ECOLOGICAL BUFFERS	Wetlands reclaimed Forests converted to grain Pastures grazed more intensely Swidden cycle shortened
VALUES	Desperation leads to re-evaluation of self-interest Value transmission and teaching disrupted

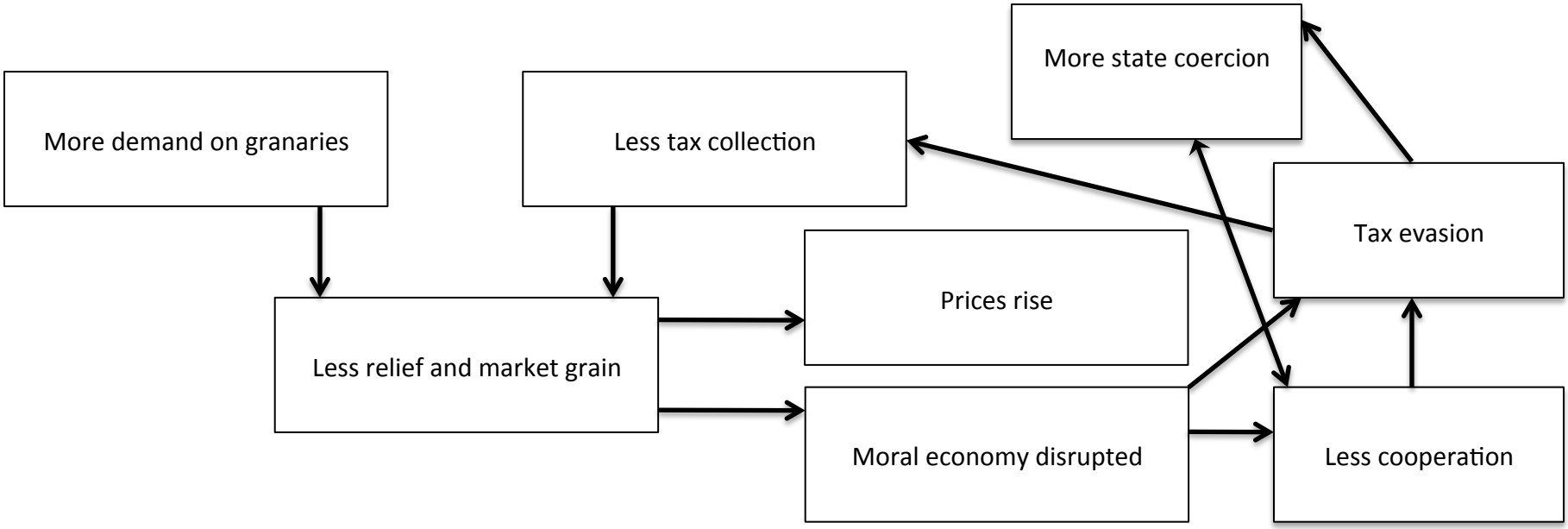
Positive Feedback Loops Within the House-Field Axis



Positive Feedback Loops Within the House-Field Axis

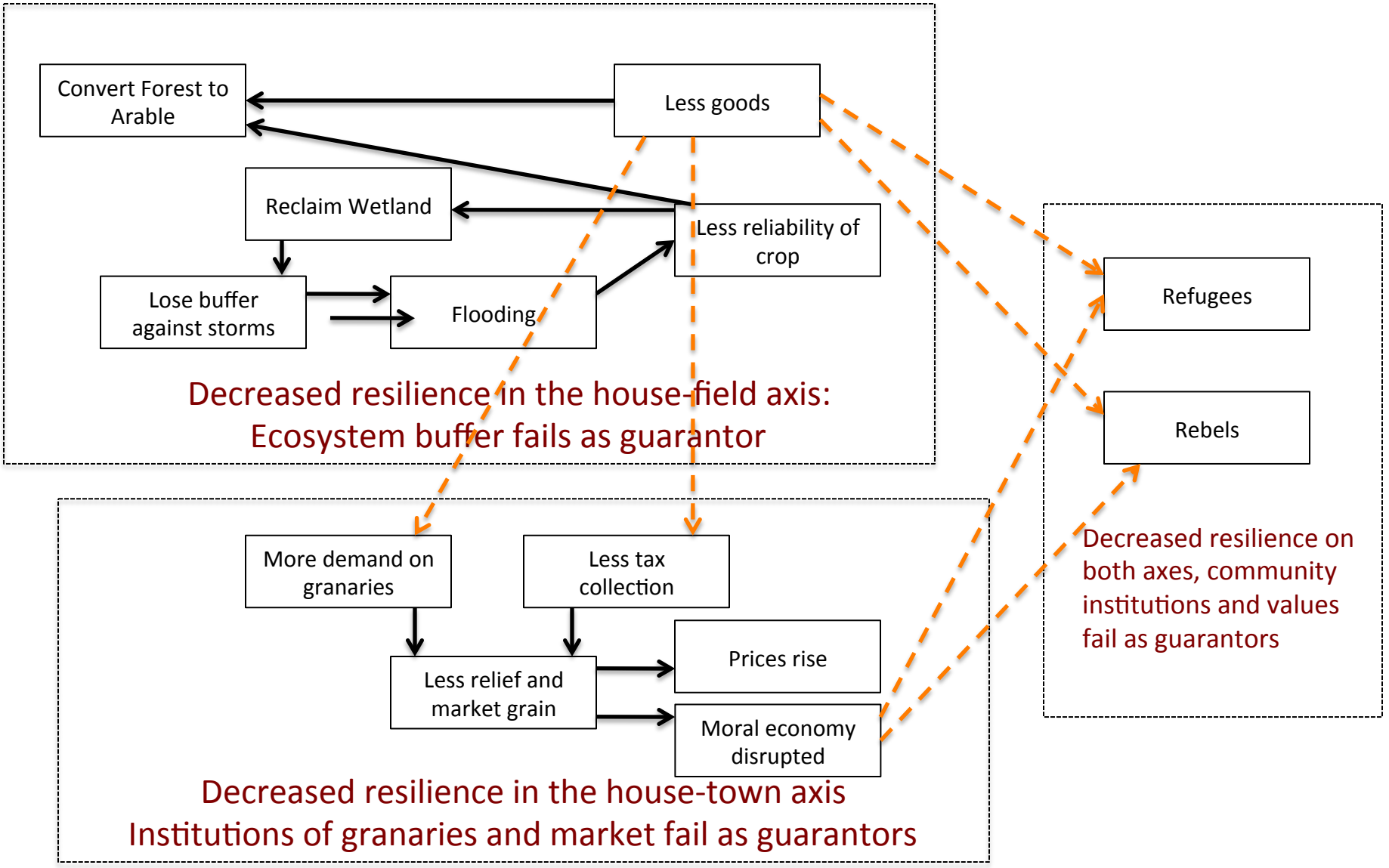


Positive Feedback Loops Within the House-Town Axis

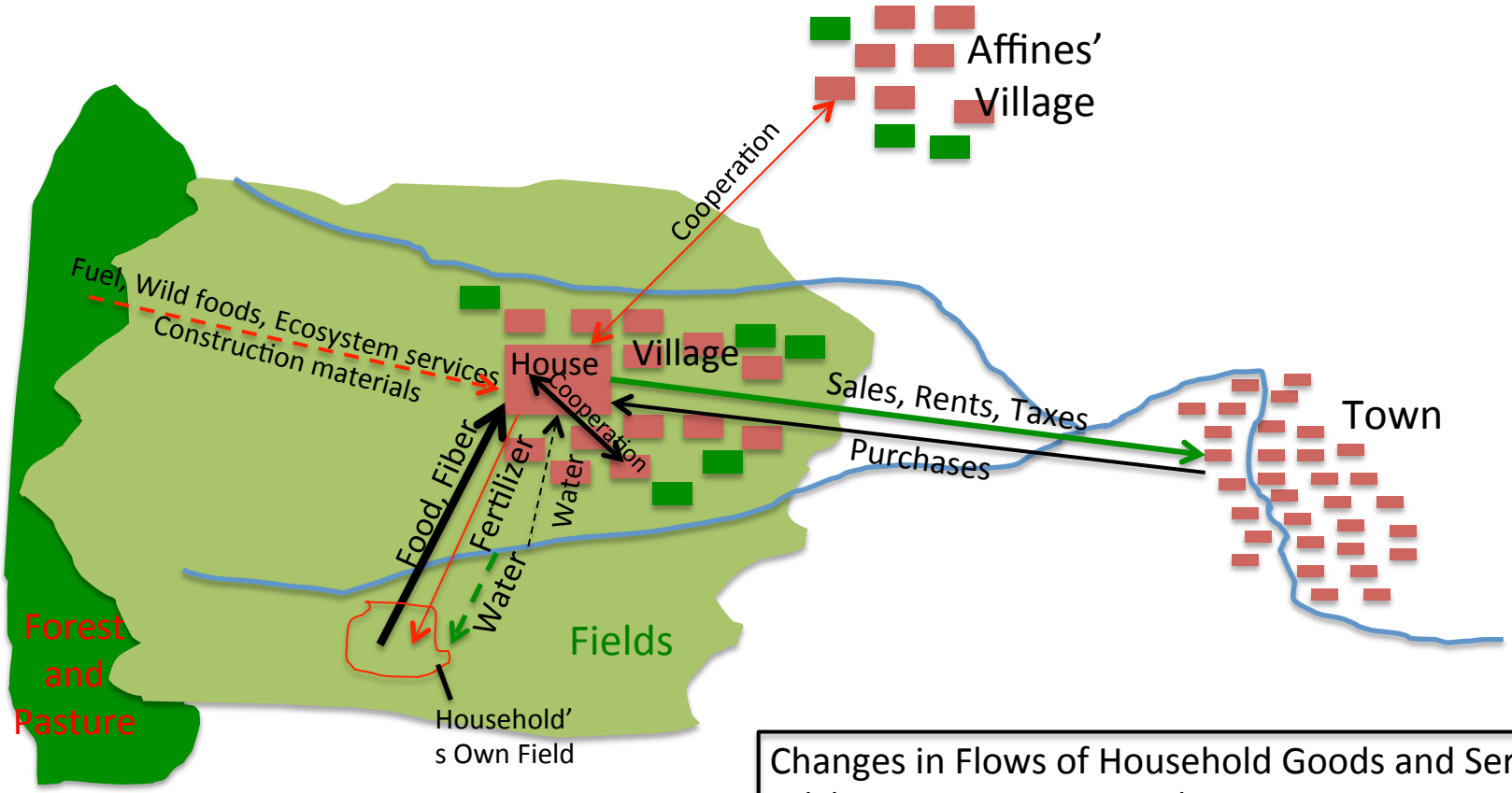


Decreased resilience in the house-town axis
Institutions of granaries and market fail as guarantors

Positive Feedback Loops Between the House-Field and the House-Town Axes



Agricultural growth and the ecology of the Chinese peasant household: Slow variable change.



Changes in Flows of Household Goods and Services

Solid arrows are private goods

Dashed arrows are common pool goods

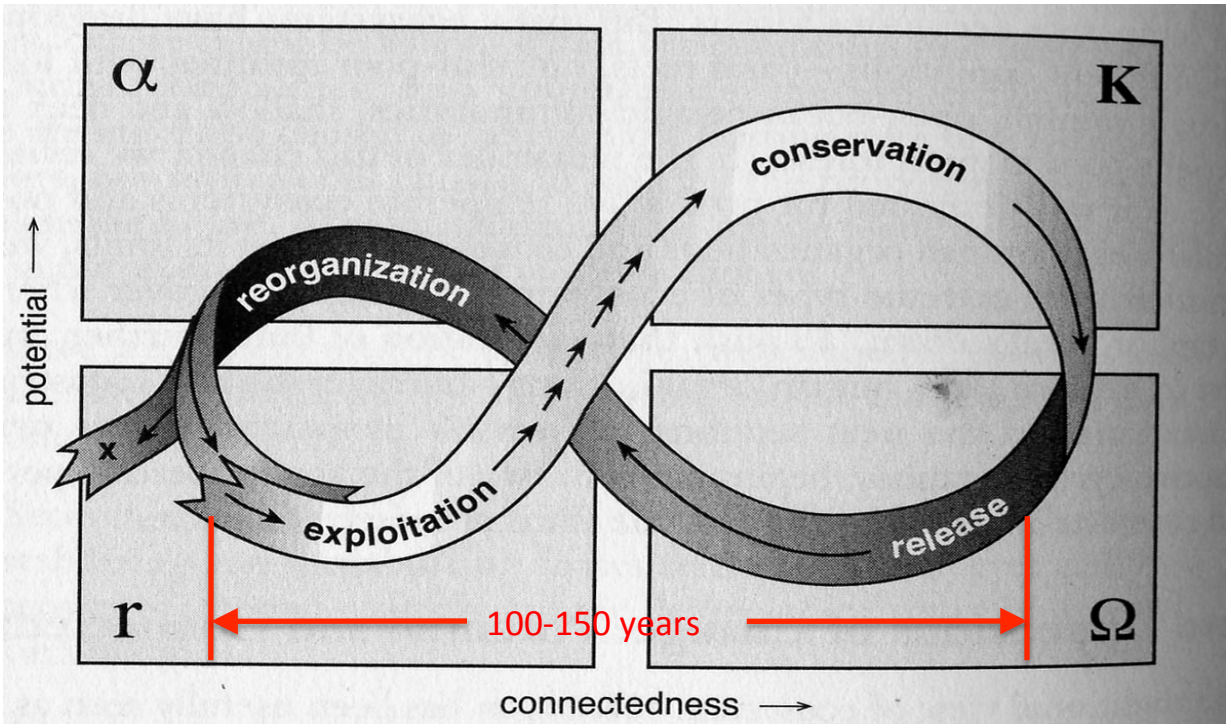
Importance of flows is roughly proportional to weights of arrows.

Green arrows represent increased flows

Red arrows represent decreased flows

Implications for Resilience Theory

- System can remain in backloop for a long time



Implications for Resilience Theory

- Or chaos of late Qing can be seen as alternative stable state