Land Reallocation in Land Consolidation: A Chinese Mode and Its Future Direction

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Objectives:

• To introduce land reallocation system in China

• To reveal challenges

• To show what are taking place through a land consolidation project in Jiangxi

• To give some suggestions on what should be done
1. Land reallocation in China

1.1 land consolidation

- **Old style**
  - Shang Dynasty

- **Modern land consolidation**
  - Institutionalization: Included in appraisal system of governors
    - 3 levels of planning system
  - Transformation: Large scale
    - Multi-objective
  - Exploration: pilot projects in 400 counties
1.2 land reallocation

different types:

• Ownership
• Other rights (lien, easement……)

right to contracted management of land (RCML)
Specific procedure of land reallocation

1. Calculation of land area (value)
2. Discussion about the distribution order and approximate locate
3. Determine land parcel location by lot
4. Land partition

Schematic diagram of land distribution order
Dominant doctrine: speed

some farmers disagree to reallocate their land?

so many factors make it hard to tradeoff?

most people are not satisfied with the result?

Land reallocation: 2 weeks, land consolidation: 2 years
2. Challenges

- Scale farming (Urbanization, industrial competition) → more demands
- Farmland registration → more steps, higher precision
- The transformation of LC → more complex
3.1 General information

Irrigated farmland: Jinhuang 45.00 ha, Fanrong 5.13 ha, Total 50.13 ha

Unirrigated farmland: Jinhuang 49.79 ha, Fanrong 39.83 ha, Total 89.62 ha

Woodland: Jinhuang 22.28 ha, Fanrong 9.51 ha, Total 31.79 ha

Pond: Jinhuang 3.09 ha, Fanrong 4.18 ha, Total 7.27 ha

Number of land parcels: Jinhuang 1030, Fanrong 1653, Total 2683

3. A case study: land consolidation of Pengze

- Average holding size: 0.20 ha
- Average number of land parcels per households: 3.83
- Average size of land parcels: 0.05 ha
3.2 Different models of land reallocation

- Land reallocation by drawing lots
- Land reallocation based on linear programming

\[
\text{Ob} = \sum_{i=1}^{m} \sum_{j=1}^{n} D_{ij} X_{ij} - \sum_{i=1}^{m} \sum_{j=1}^{n} F_{ij} X_{ij}
\]

Subject to:

\[
\sum_{i=1}^{m} X_{ij} = PA_j
\]

\[
\sum_{j=1}^{n} X_{ij} = BA_i
\]

Key factors:

- Original location of land parcels
- Settlements
Before land reallocation

holding size: 0.24 ha
numbers of land parcels: 1.14
parcel size: 0.21

Land reallocation by lots

holding size: 0.23 ha
numbers of land parcels: 1.08
parcel size: 0.223

Land reallocation by linear programming

holding size: 0.23 ha
numbers of land parcels: 1.08
parcel size: 0.223
3.2 Land transfer based land reallocation

Key factors:

- Land consolidation doubled farmland price
- Local government as a mediator
  - Matchmaking
  - Mediation
- High priority of farmers not leasing their land
  - Best quality
  - Nearest location

638 out of 705 household transfer their land to 2 farmers
4. Future direction

- The administration aspect:
  - Farmers behavior (participation)
  - Legislation
  - The initial of land consolidation

- The technical aspect:
  - Farmland evaluation system
  - Land location redistribution
  - Land partitioning

Farmers willingness: Accuracy and efficiency
5. Conclusion

- Low ratio and traditional method of land reallocation in land consolidation can’t adapt to new situation of China rural area

- New theory (Institutional Economics/ Game theory…) and new technology (GIS/SDSS…)

- A link between both technical and administrative improvement is necessary
Thank you for your attention