

# Agriculture in a modern world

Lecture 8/1 - 2/2013

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# Agricultural development strategies

- ▶ Three different agricultural strategies/policies that view development of agricultural sector as a means (to speed the overall process of development) to an end
- ▶ (i) a free-market strategy of 'benign neglect'
- ▶ (ii) an activist government strategy directed toward small farmers
- ▶ (iii) an intermediate strategy recognizing government failures as well as market failures

## (i) Free-market strategy

- ▶ In a world of 'rational expectations', benign neglect of agricultural policy was thought to be sufficient for stimulating the process of economic growth.
- ▶ The agricultural sector must decline in proportional output terms and absolutely in the labor force, and the long-run decline in basic agricultural commodity prices due to technical change emphasizes that society is best served by getting resources out of agriculture as rapid as possible

## (ii) Interrelated strategy

- ▶ Johnston and Mellor (1984) present an 'interrelated strategy' and the need for government in strategic design and program implementation. Agricultural growth not only satisfies the need for food to meet nutrition requirements, but also fosters a favorable employment-oriented demand structure as well.
- ▶ This strategy is mainly directed by government planners while the private sector only plays a small role as small farmers, and focus on a closed economy
- ▶ 3 key elements to meet all objectives of agricultural development:
  - ▶ massive investment in human capital through nutrition, health, and family planning services
  - ▶ creation of the complex, rural organizational structures seen in Japan and Taiwan that provide services to small farmers while serving as a voice for their interests
  - ▶ investment in rapid technical change appropriate to these small farmers to raise agricultural output and rural incomes

### (iii) Market policy strategy

- ▶ This strategy calls for government policy interventions into market outcomes but uses markets and the private marketing sector as the vehicle for those policy interventions.
- ▶ It recognizes market failures in agriculture and extensive government failures in implementation of economic tasks.
- ▶ Main focus: how to cope with segmented rural capital and labor markets, poorly functioning land markets, the welfare consequences of sharp instability of prices in commodity markets.
- ▶ However, government interventions still have many flaws, or sometimes make matters worse.
- ▶ Way to solve these problems: try to clearer understanding the necessary interaction between the public and private sectors

### (iii) Market policy strategy

- ▶ Dilemma objectives: agricultural performance as its capacity to feed the population regularly and cheaply, or as its ability to provide fair incomes to farmers
- ▶ Market policy path believes in using interventions into the prices determined in markets, not by leaving markets alone or by doing direct activities by the government.
- ▶ It requires that government intervention be based on an empirical understanding of economic responses to a change in policy and the political repercussions from them.

# Agricultural policy and structural change

- ▶ Hayami and Ruttan (1985) indicate that poor performance in agricultural sector was neither the meager endowment of natural resources nor the lack of technological potential to increase output from available resources to meet the demand growth.
- ▶ The major constraint limiting agricultural development was the policies that impeded rather than induced appropriate technical and institutional innovations.
- ▶ For agricultural transformation, we need a mix of appropriate new technology, flexible rural institutions, and a market orientation that offers farmers rewards for their efforts and for the risks they face from both nature and markets.

## Induced technical and institutional change

- ▶ Hayami and Ruttan (1985): the direction of technical and institutional change in agriculture toward saving labor or saving land is induced by relative scarcity of labor versus land.
- ▶ Agriculture is characterized by stronger constraints of land on production than other sectors. Hence, agricultural growth may be viewed as a process of easing the constraints on production imposed by inelastic supplies of land and labor.
- ▶ Nonagricultural sector absorbs labor from agriculture and supplies modern technical inputs to agriculture. These inputs can be substituted for land and labor.

## Induced technical and institutional change

- ▶ A rise in the price of land relative to the price of labor induces the substitution of labor for land.
- ▶ New high-yield seeds and fertilizer also relax land constraints.
- ▶ The advance in technology is itself a function of institutional innovation. Therefore, farmers exert political pressure to induce institutional innovations that will advance technological change.
- ▶ In this process, we see that shifts in the demand for institutional change are induced by changes in relative factor supply and technical change.

## Technical change in agricultural development

- ▶ There is a spillover from the technical change in agriculture.
- ▶ In a small open economy with producers facing infinitely elastic demand, the gains from technological change accrue entirely to producers in the form of higher profits.
- ▶ If demand is perfectly inelastic, all gains accrue to consumers in the form of lower prices.
- ▶ Since most agricultural products exhibit price inelastic demand, producers tend not to benefit much in LR equilibrium from technological change.
  - ▶ Producers adopt new technologies because they reduce unit costs, thereby increasing productivity.
  - ▶ But when aggregate supply curve shifts and prices fall, producers may end up getting worse off if demand is sufficiently inelastic.
- ▶ Welfare gains from technical change are captured as consumer surplus due to lower prices, than in producer surplus.