

Green Revolution in India and Its Significance in Economic Development: Implications for sub-Saharan Africa

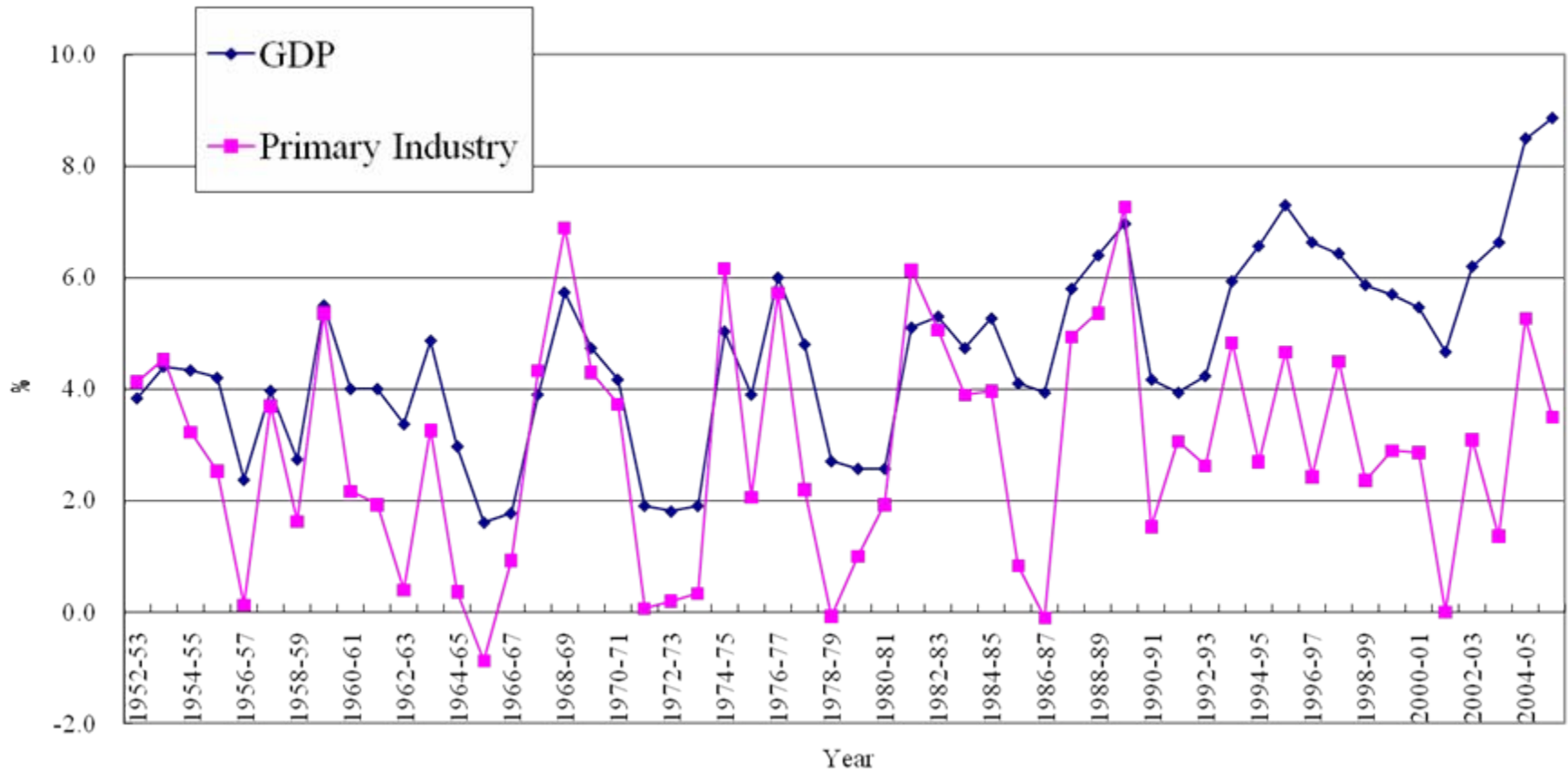
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Objectives of the paper

- To analyze the historical role of the Green Revolution in South Asia (especially in India) in its overall economic development process
- To show the logic why Green Revolution is essential before starting sustainable economic development with industrialization
- To consider the possibilities of Green Revolution in the context of contemporary sub-Saharan Africa

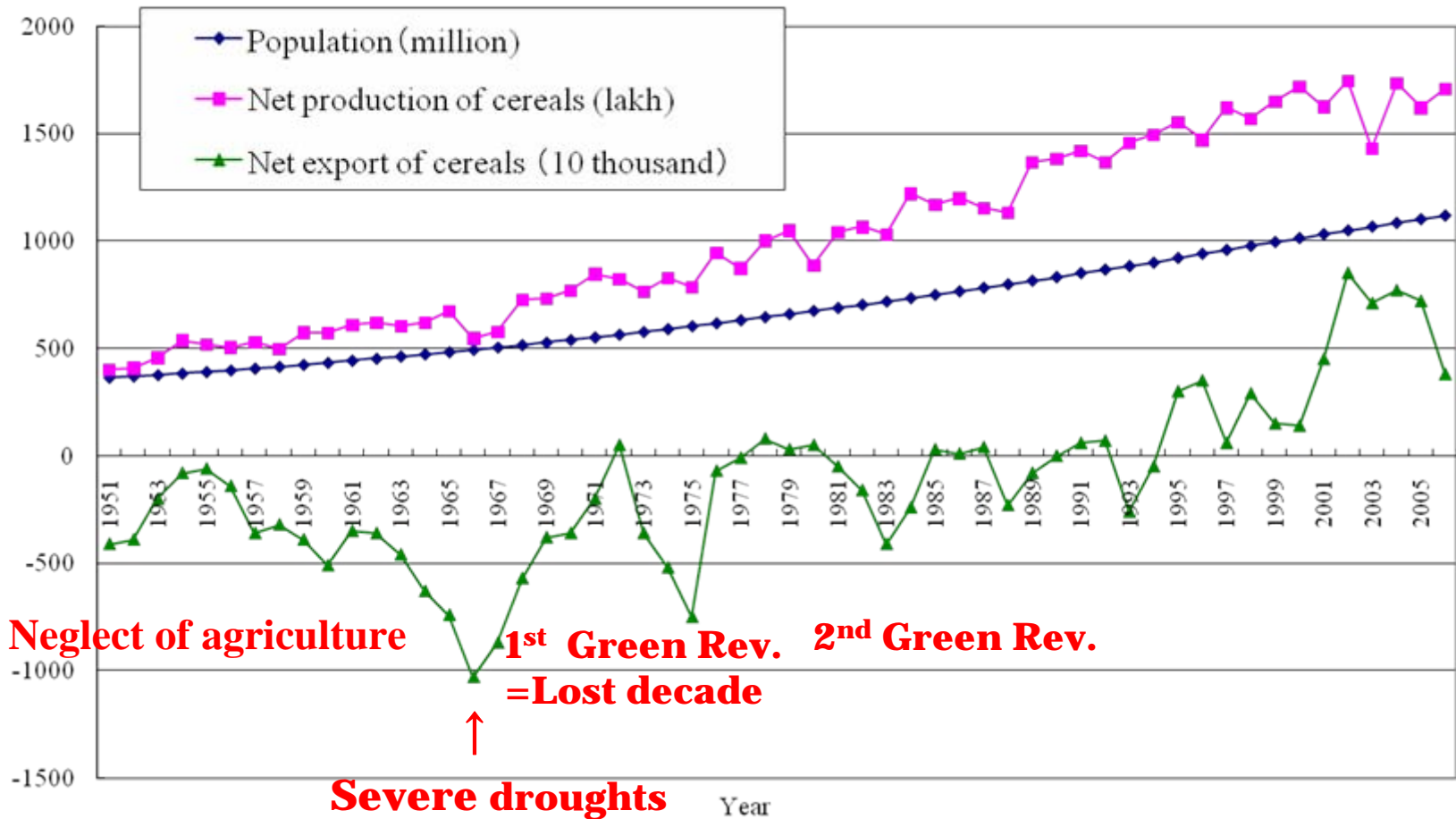
Accelerated economic growth in India after the 1990s



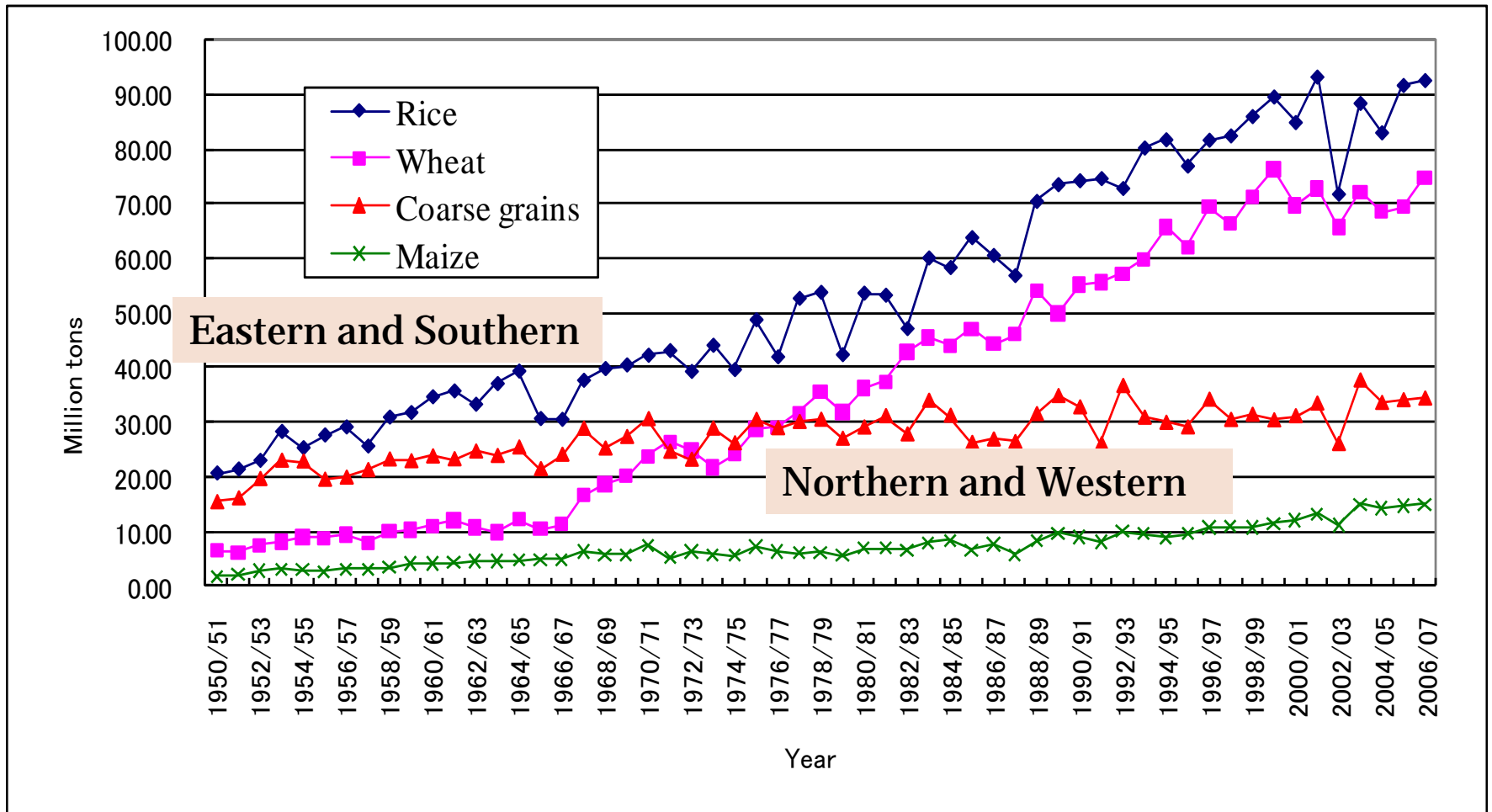
Impact of liberalization policies?

→ Role of the agricultural development in the 1980s

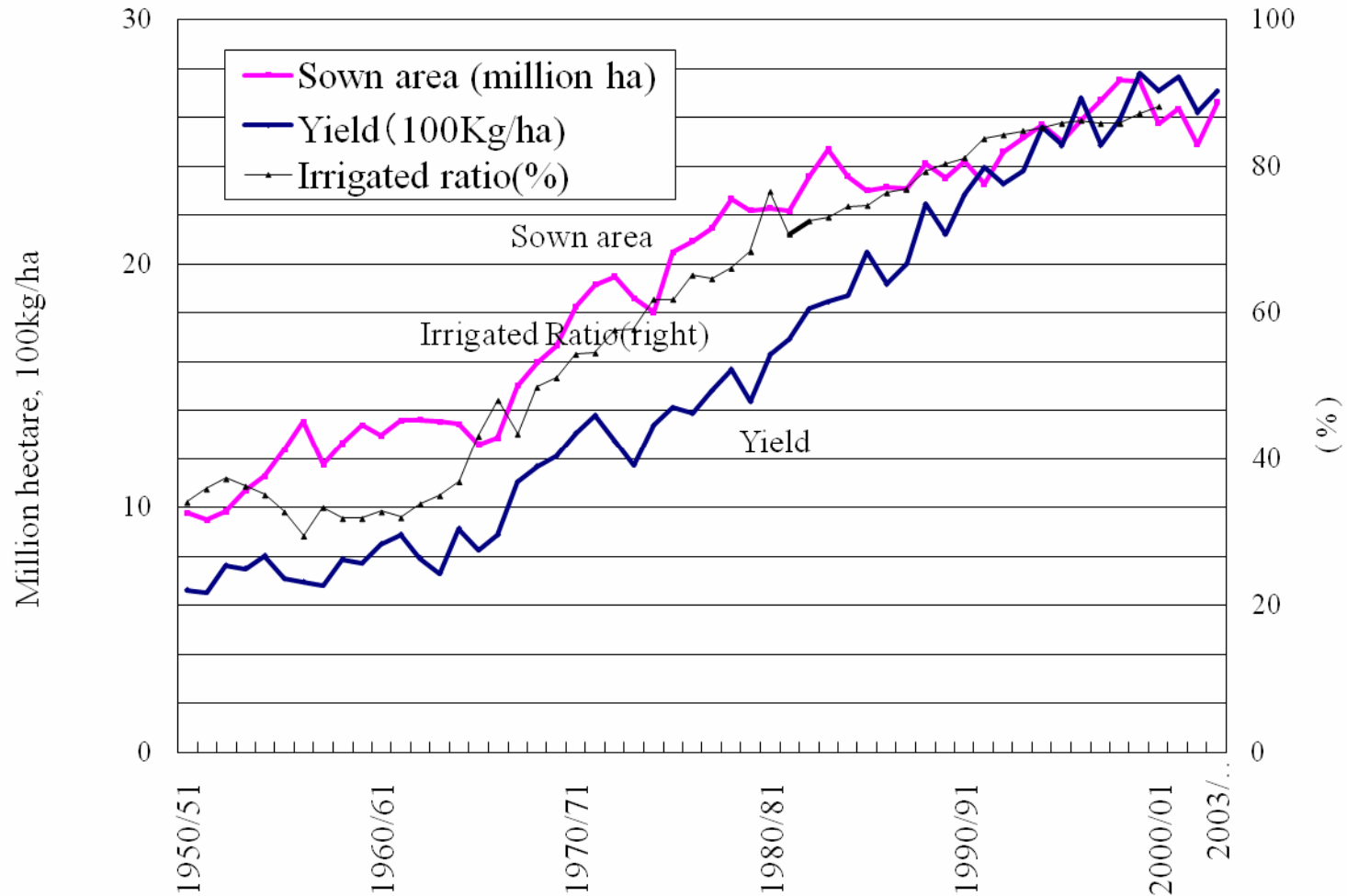
Food production, net export, and population in India



Wheat as a minor crop to a dominant crop



Wheat Revolution in India

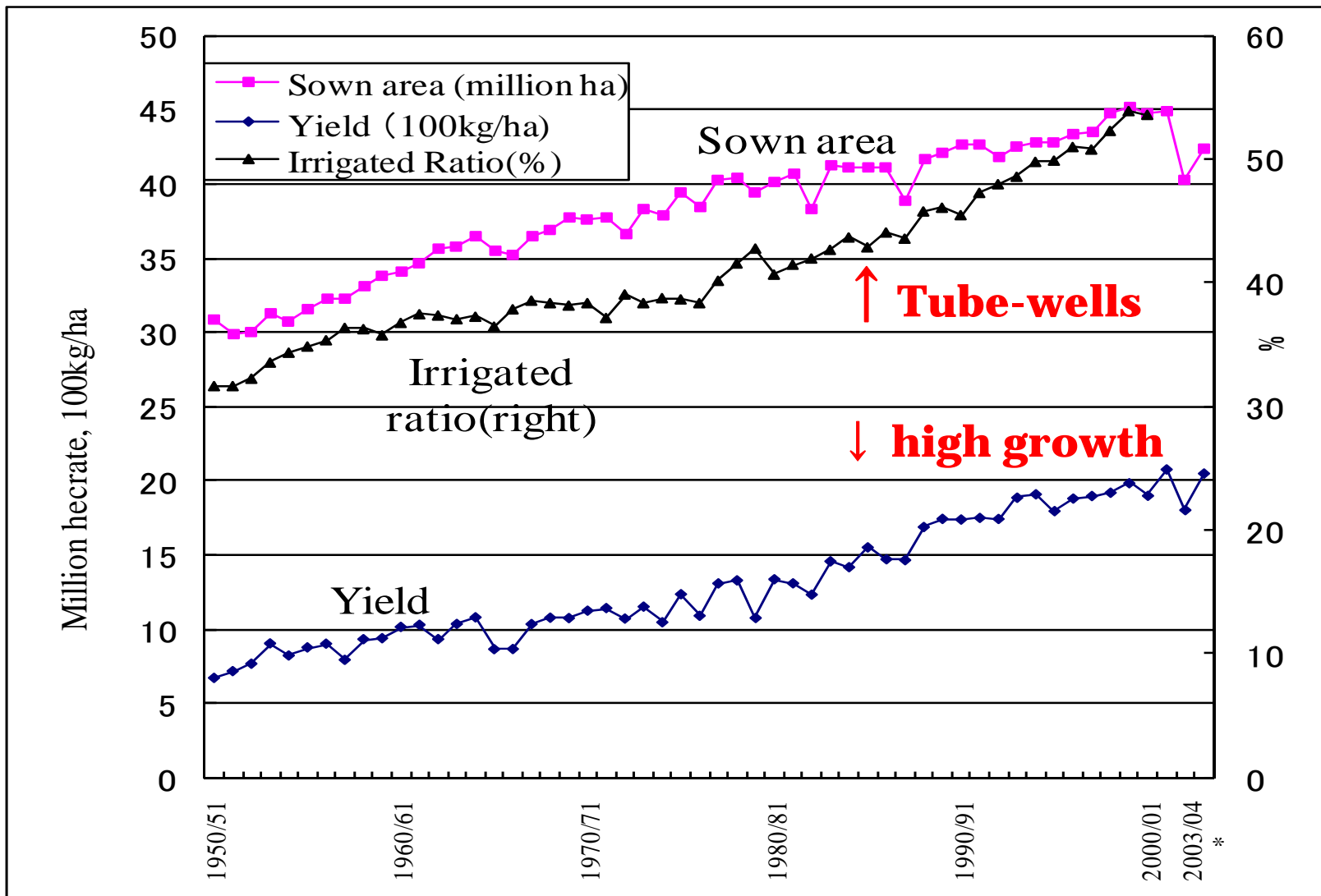


Nationwide agricultural development in the 1980s

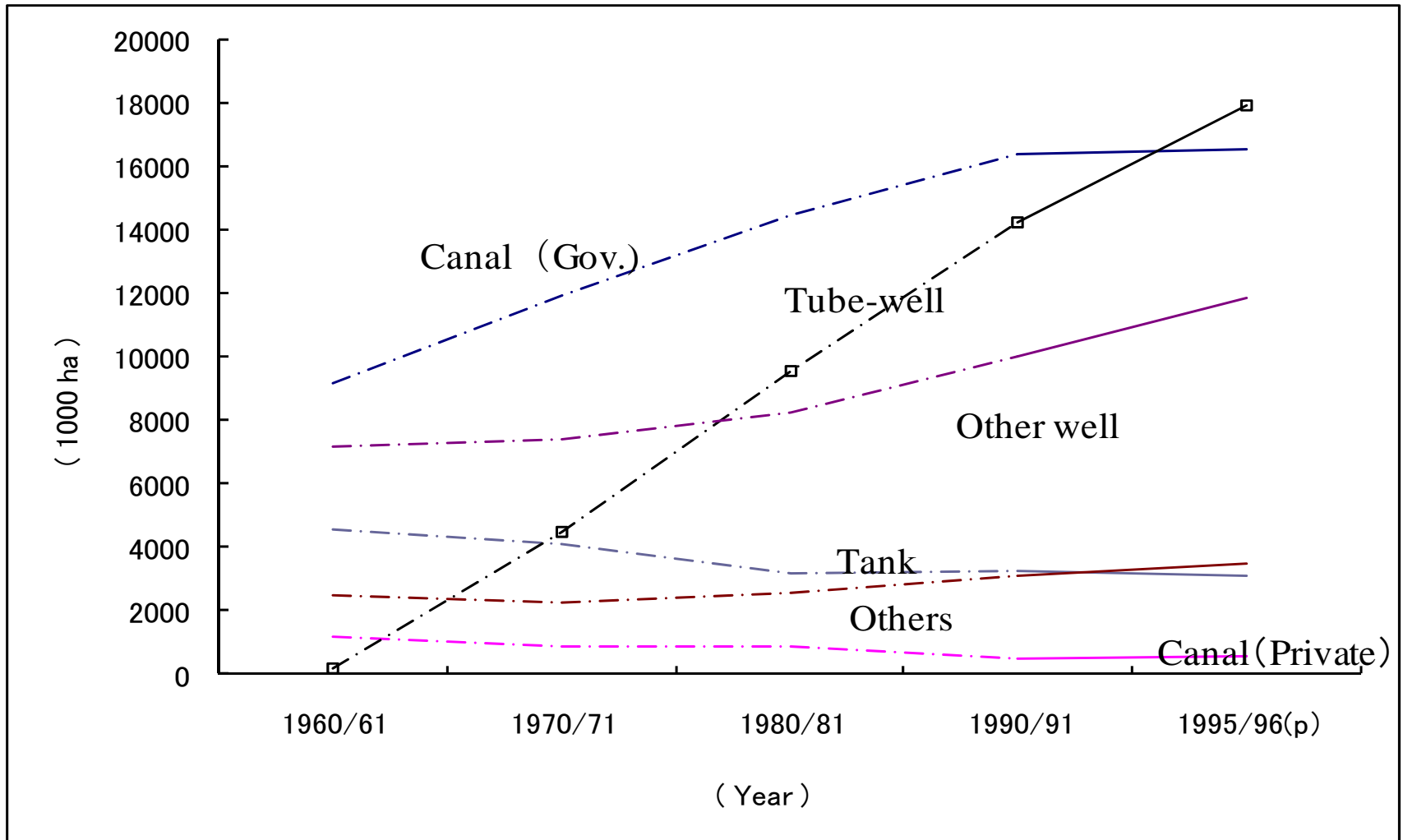
| | 1950~60 | 1960~70 | 1970~80 | 1980~90 | 1990~96 |
|--|---------|---------|---------|---------|---------|
| Rice | 4.53 | 2.12 | 1.73 | 4.08 | 1.60 |
| Wheat | 5.79 | 7.73 | 4.15 | 4.29 | 3.64 |
| Coarse grains | 3.76 | 1.67 | 0.55 | 0.71 | -0.99 |
| Maize | 7.84 | 3.90 | 0.64 | 3.20 | 1.30 |
| Total | 4.45 | 3.10 | 2.07 | 3.38 | 1.81 |
| Pulses | 3.80 | -0.47 | -1.18 | 2.45 | -0.07 |
| Total Foodgrains | 4.35 | 2.63 | 1.76 | 3.31 | 1.66 |
| Oilseeds | 3.05 | 2.41 | 1.34 | 6.01 | 4.16 |
| Sugarcane | 5.62 | 2.54 | 2.27 | 4.38 | 3.72 |
| Cotton | 4.54 | 2.03 | 2.69 | 3.23 | 4.51 |
| Jute/Mesta | 5.60 | 0.32 | 2.13 | 1.28 | 2.18 |
| Note. The data are three year moving averages. | | | | | |

Rice Revolution in eastern and southern India and oilseeds and cotton revolutions in hitherto coarse grain producing areas.

Rice Revolution in the 1980s

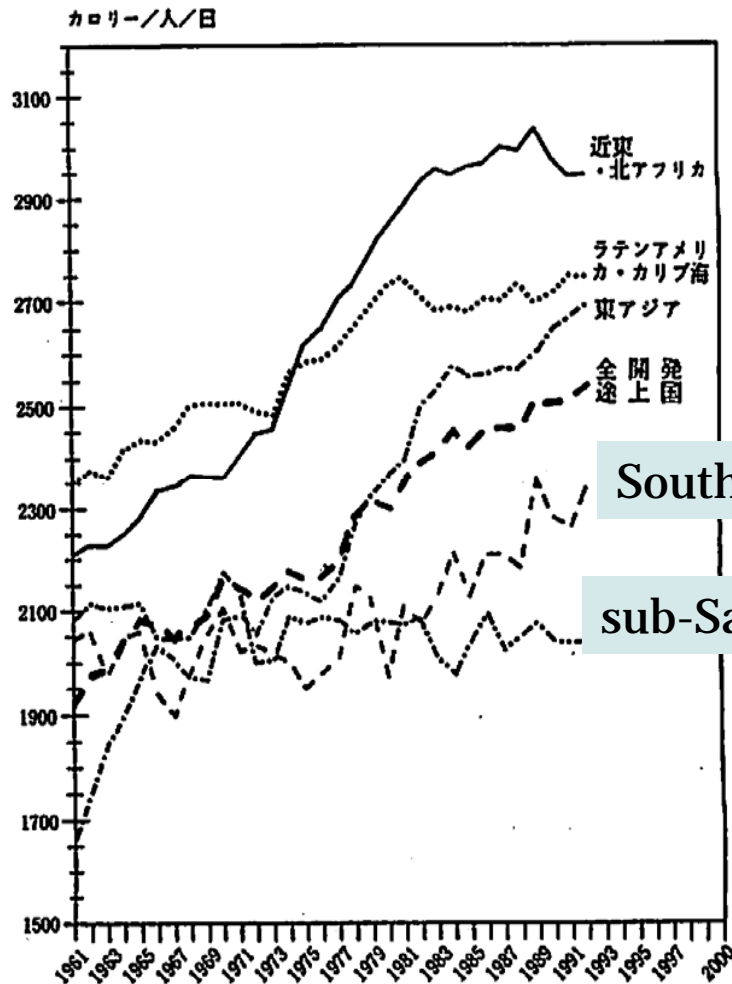


Minor irrigation development in India



Great **divergence** between South Asia and sub-Saharan Africa in the 1980s

Per capita calorie intake in developing countries



Rising real wages
Reduction of rural poverty

South Asia

sub-Saharan Africa

Essence of Indian (and Bangladesh) experience

- In the 1980s rice Revolution in eastern (including Bangladesh) and southern India and yellow Revolution (oilseeds) in central India was taken place, which raised rural income and alleviate poverty to a certain extent.
- The engine of rice Revolution was the introduction of tube-well irrigation in hitherto rain-fed rice growing areas.
- Tube-well irrigation induced a widespread emergence and development of ‘groundwater market’, which was basically an efficient rural institution.

Logic of Green Revolution's role in economic development

- Nationwide agricultural growth with productivity growth
- ↓
- Uplifting income of majority of population (rural population) 'to a certain level'
- ↓
- Thus creating a large 'market' for non-agricultural products and services
- ↓
- Development of non-agricultural sector in a sustainable manner

Implications for sub-Saharan Africa I

- The key is how to raise income of majority of population to a certain extent
- Is a Green Revolution possible in sub-Saharan Africa?
- Disadvantages:
 - 1) Diversity of staple food (wheat and rice is relatively minor crop for farmers)
 - 2) Almost totally rain-fed
 - 3) Difference in food preference between rural and urban areas
 - 4) Labor scarcity (still) in rural areas
 - 5) Small market size for industrialization (small poor countries)

Implications for sub-Saharan Africa II

- The most prospective is a rice Green Revolution
- Possibility of NERICA (New Rice for Africa)
- May not be a widespread Green Revolution in rural Africa, but at least contribute to a substantial decrease of rice imports
- Importance of investment for agriculture in addition to investment in agriculture

Thank you
for your attention !