

Appendix A

China's Agriculture Policy Simulation Model (CAPSiM) is an agricultural sector-wide partial equilibrium model. There are 22 agricultural commodities covered in the CAPSiM. The general framework of the CAPSiM and its applications are discussed in Huang and Li (2003) and Huang *et al.* (2007).

For the food supply and demand projection for 2025, the following assumptions are included in the baseline scenario:

- Economy growth: We assume that China's economy growth will slow down slightly in the coming decade. The annual GDP growth rate is assumed to fall from 7.0% in 2016 to 6.0% in 2020 and 5.0% in 2025.
- Household income growth: We assume that the gap between rural and urban incomes will gradually narrow over time. Specifically, per capita rural income will grow annually at 6.2% from 2016 to 2020 and 5.3% from 2021 to 2025; and per capita urban income will grow annually at 5.6% from 2016 to 2020 and 4.8% from 2021 to 2025.
- Population and urbanization: Average annual population growth rate is projected to be 0.65% from 2016 to 2020 and 0.21% from 2021 to 2025. The share of the urban population will increase from 55% in 2016 to 60% in 2020 and 70% in 2030.

- Technology change: We assume that the government will continue to invest heavily in agricultural research and development in the coming decade, which will increase crop yields and the conversion of feed into meat. Appendix Table 1 summarizes the assumed annual growth in crop yields due to the technology changes in the coming decade.

Appendix Table 1. Annual growth (%) of crop yield due to technology changes from 2016 to 2020 and 2021 to 2025 in the baseline scenario.

	2016-2020	2021-2025
Rice	0.84	0.63
Wheat	0.84	0.63
Maize	0.90	0.70
Sweet potato	0.84	0.68
Potato	0.90	0.72
Other coarse	0.96	0.77
Soybean	0.96	0.77
Cotton	1.12	0.90
Oilseeds	1.12	0.90
Sugar	0.86	0.60
Vegetable	1.28	1.02
Fruit	2.03	1.82

Source: CAPSiM model

Reference

- Huang J K, Yang J, Xu Z G, Rozelle S, Li N H. 2007. Agricultural trade liberalization and poverty in China. *China Economic Review*, **18**, 244–265.
- Huang J K, Li N H. 2003. China's agricultural policy analysis and simulation model-CAPSiM. *Journal of Nanjing Agricultural University*, **3**, 30–41.