

# THE SCIENCE AND TECHNOLOGY BACKYARD AS A LOCAL LEVEL INNOVATION INTERMEDIARY IN RURAL CHINA

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## SUPPLEMENTAL MATERIAL

**Table S1** Detailed information about the knowledge test

| Feature  | Value           | Questions   |
|--|-----------------|---|
| Basic awareness of the existence of the technology | 1 = yes; 0 = no | Do you know the large machine powered DPRT? (1 = yes; 0 = no)   |
| Detailed understanding of DPRT                     | 1–5             | Could you explain DPRT in details? (Please give a score based on the answers of farmers with the reference of the standards answer, 1=very unclear; 2 = unclear; 3 = fair; 4 = clear; 5 = very clear)   |
| Roles of DPRT in production                        | Scores 0–5      | Based on five questions:<br>Does the DPRT deepen of the tillage layer? (1 = yes; 0 = no)<br>Does the DPRT reduce pests and diseases? (1 = yes; 0 = no)<br>Does the DPRT improve soil consolidation? (1 = yes; 0 = no)<br>Does the DPRT conserve moisture? (1 = yes; 0 = no)<br>Does the DPRT increase yields? (1 = yes; 0 = no) |
| Suitable application scenarios                     | Scores 0–3      | Based on three questions:<br>Is the DPRT suitable for plots with deep soils? (1 = yes; 0 = no)<br>Is the DPRT suitable for crops with deep root systems? (1 = yes; 0 = no)<br>Does the DPRT require a large power tractor for towing? (1 = yes; 0 = no)   |
| Perceived constraints to adoption                  | Scores 0–3      | Based on three questions:<br>Do you think DPRT is complicated to operate? (1 = yes; 0 = no)<br>Do you think DPRT is in a slow operation rate? (1 = yes; 0 = no)<br>Do you think the cost of DPRT is high? (1 = yes; 0 = no)   |
| Standards for assessing the operation quality      | Scores 1–4      | What are the standards for assessing the tillage quality of DPRT? (Multiple choice)<br>1 = Levelness of the ground<br>2 = Seedling emergence<br>3 = Straw turned in<br>4 = Depth<br>Choose one  |