

Text 4

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Source: Ecological Economy

Time of publication: June 2008

An Analysis of Farmers' Willingness to Adopt Sustainable Agricultural Technology

Although China has been successful in promoting sustainable agricultural technology to a certain extent, it is still unsatisfactory overall: in terms of technology supply, technology demand and environmental policies, there is still great insufficiency. Following China's current attention to the ecological environment and the introduction of relevant policies, finding the factors influencing farmers' use of sustainable agricultural technology and raising targeted technology-promoting measures in order to promote sustainable development of agriculture is currently an urgent and significant issue.

Studies on the relationship between salient characteristics of users and non-users of sustainable agriculture shows that the main factors affecting farmers' willingness to adopt sustainable agricultural technology are as follows: (1) farm characteristics; (2) family characteristics (farmer characteristics); (3) system variables; and (4) other factors.

Research method: While carrying out the survey, allow farmers to choose between current agricultural technology and two other hypothetical sustainable agricultural technologies. The hypothetical sustainable agricultural technologies produce similar effects as the current technology, but one of the two will pollute the environment whereas the other will not affect human health. Obtain two continuous variables - farmers' willingness to pay for environment and for human health, then apply the factors influencing farmers' willingness to pay to measure the factors affecting farmers' adoption of sustainable agricultural technology.

Survey results:

Variable	Description	Result
WTPAYE	Willingness to pay for environment (Yuan/acre year)	NA
WTPAYH	Willingness to pay for human health (Yuan/acre year)	NA
AGE	Age	(?)
EDU	Years of education	(+)
INCOME	Per capita income (Yuan)	(+)
TELEV	Reliance on television as source of information (1 if yes, 0 if no)	(?)
RELE	Reliance on friends and family as source of information (1 if yes, 0 if no)	(-)
PREVIOUS	Previous signs of poisoning (1 if yes, 0 if no)	(+)
AREA	Area of arable land (acres)	(?)
CHIL	Number of household members below the age of 18	(+)
OLD	Number of household members above the age of 64	(+)
COOK	Cooking at home (Yes/No)	(+)
EXPE	Pesticide expenditure per capita per year	(+)

Conclusion: Through regression analysis, the following conclusions can be made:

(1) The farmers' education level is one of the main factors affecting their willingness to pay for environment and human health.

(2) The number of elderly household members is another important factor affecting farmers' willingness to pay for environment and human health.

(3) Age is a significant factor affecting farmers' willingness to pay for environment, but its impact on the willingness to pay for human health is insignificant (at the 10% level on SPSS)

(4) The source of information is a significant factor affecting farmers' adoption of sustainable agricultural technology.