Supplementary Materials: Do Consumers of Environmentally Friendly Farming Products in Downstream Areas Have a WTP for Water Quality Protection in Upstream Areas?

Table S1. Profile of downstream survey respondents.

Characteristics	Description	Buyers (N: 105)	Non-buyers (N: 105)	Total (N: 210)
		Mean (Std. Dev.)		
Age	Years	46.6 (10.5)	47.1 (10.9)	46.9 (10.7)
Number of Children	N	2.5 (1.2)	2.5 (1.1)	2.5 (1.1)
		Percentage (%)		
Education	Primary	0.0	1.9	1.0
	Secondary	4.8	4.8	4.8
	High	51.4	46.7	49.0
	University	43.8	46.7	45.2
Income [a]	10–20	3.8	1.9	2.9
	21–30	17.1	19.0	18.1
	31–40	21.0	22.9	21.9
	41–50	36.2	35.2	35.7
	51–60	16.2	17.1	16.7
	>61	5.7	3.8	4.8

[a] Unit = million in KRW.

Table S2. Summary for the yes response regarding the WTP of downstream respondents.

	Yes Response Rate for the willIngness to Pay for the Water Quality Improvement
Buyers	90.5% (N = 95)
Non-Buyers	85.7% (N = 90)
Total respondents	88.1% (N = 185)

Table S3. Response results for bid values and proportion of downstream respondents.

1st bid	2nd bid (upper)	2nd bid (lower)	Yes/Yes response	Yes/No response	No/Yes response	N/N response	Total Response
	Bids (KRW [a])		N				
2000	3000	1000	10	10	7	17	44
4000	5000	3000	6	3	0	38	47
6000	7000	5000	9	1	1	36	47
8000	9000	7000	2	3	0	42	47

[a] KRW means the currency of South Korea and US$1.00 = KRW 1055.4, at the time of the survey (2013).

Table S4. Description of the variables used in the bivariate Probit model.

Variables	Description	Type of Measure	Expected Sign
WTP	Whether a consumer has a willingness to pay or not	Dummy (1 if yes, 0 if no)	N.A.
Bid	Bid amount in KRW [a] as a tax paid for water quality improvement per month	Bid	negative
Buyer	1 if respondent bought environmentally friendly farming products, 0 otherwise	Dummy (1 if yes, 0 if no)	positive

Table S5. Reasons for the no response regarding WTP of downstream respondents.

Reasons	N (%)
I can not afford it financially	15 (60)
The central government should be responsible for the payment for the water quality improvement	2 (8)
The local government should be responsible for the payment for the water quality improvement	3 (12)
No response	5 (20)
Total	25 (100)

Table S6. Descriptions of variables used in OLS model and their marginal effects.

Variables	Description	Mean (s.e)	Calculated Values by Marginal Effect (KRW [a])
Age	Age of respondents (years)	46.9 (10.7)	N.A
Edu [b]	Education level	3.4 (0.6)	N.A
Income [c]	Household income (10000 KRW)	4.6 (1.2)	N.A
Children	Whether respondent households have children (1: yes, 0: no)	0.9 (0.3)	N.A
Label	Whether respondents know EFA-labels (1: yes, 0: no)	0.8 (0.4)	924
Future purchase intension of EFF products	Whether respondents want to purchase environmentally friendly products in future (1: yes, 0: no)	0.5 (0.5)	N.A
Average expenditure of EFF products	Whether there is a dollar amount that respondents are going to spend on purchasing environment-friendly agricultural products (10,000KRW)	0.5 (0.5)	N.A
Future purchase willingness of current consumers with EFF products	Interaction between *Future purchase intension of EFF products* and *Average expenditure of EFF products*	0.3 (0.4)	3120

[a] KRW means the currency of South Korea and US$1.00 = KRW 1055.4, at the time of the survey (2013); [b] 0 = no formal education; 1 = primary education; 2 = secondary education; 3 = high school; 4 = college and university; [c] 1 = less than 10,000,000 KRW, 2 = 1~2,000,000 KRW, 3 = 2~30,000,000 KRW, 4 = 3~40,000,000 KRW, 5 = 4~50,000,000 KRW, 6 = 5~60,000,000 KRW, 7 = 6~70,000,000 KRW, 8 = 7~80,000,000 KRW.

Table S7. Average income loss during transition periods from conventional farming to environmentally friendly farming.

Year	N	Average Annual Income Loss [KRW [a] 10,000/ha]
1	48	1357
2	48	1519
3	46	1549
4	41	1612
5	38	1635

[a] Unit: US$1.00 = KRW 1055.4, at the time of the survey (2013).

Table S8. The reasons not to adopt environmentally friendly farming of upstream farmers.

Reasons	Conventional Farmers (*N* = 45)	Partially Converted Farmers (*N* = 26)	Total (*N* = 71)
Higher profitability in conventional farming	10 (22.2)	13 (50.0)	23 (32.4)
Old age (aging)	17 (37.8)	6 (23.1)	23 (32.4)
Lack of labors	5 (11.1)	1 (3.8)	6 (8.5)
Lack of skills utilizing advanced technology for EFF	3 (6.7)	NA	3 (4.2)
Large farmland size	1 (2.2)	2 (7.7)	3 (4.2)
Other reasons	9 (20.0)	4 (15.4)	13 (18.3)

Table S9. The comparison of mean values between survey sample and Seoul samples.

Variable	Seoul Sample		Survey Sample		
	Mean	SD.	Mean	SD.	Standardized mean difference (SMD) [a]
Income of households (KRW 10,000 in 2013)	4394	4129	4149	1198	0.08
N	3798		210		

[a] SMD calculated using Cohen's d procedures.