

Supplementary Table 1 Agro-climatic region-wise distribution of KVKs in Madhya Pradesh	
Chhattisgarh plains	Balaghat
North hills of Chhattisgarh	Anuppur, Dindori, Mandla, Shahdol, Umaria.
Bundelkhand region	Chattarpur, Datia, Tikamgarh, Niwari
Gird zone	Ashoknagar, Bhind (lahar), Guna, Gwalior, Morena, Shivpuri, Sheopur.
Kymore plateau and Satpura hills	Jabalpur, Katni, Panna, Rewa, Satna, Sidhi, Singarauli, Seoni,
Jhabua hills	Alirajpur, Jhabua,
Malwa plateau	Agar Malwa, (Dhar, Dhar-II), Dewas, Indore, Neemach, Mandsaur, Ratlam, Rajgarh, Shajapur, Ujjain.
Nimar valley	Badwani, Burhanpur, Khandwa, Khargone,
Satpura plateau	Betul, (Chhindwara, Chhindwara-II)
Vindhya plateau	Bhopal, Damoh, Raisen, Sehore, (Sagar, Sagar-II), Vidisha
Central Narmada valley	Narsinghpur, Narmadapuram (old name Hoshangabad), Harda

Supplementary Table 2 Distribution of KVKs (Host institution wise)	
Host institution	Number
State agricultural university	44
Central university	1
ICAR institute	1
NGO	8

Supplementary Table 3 Summary statistics of socio-economic and farming systems characteristics		
Variables	DFI households (n=543)	Non-DFI Households (n=547)
Age (years)*		
Mean (No. of years)	45.27 (11.79)	45.54 (12.10)
Young (20–37) (%)	27.63	25.99
Middle-aged (38–55) (%)	53.38	54.04
Old (>55) (%)	18.98	21.32
0.2364 ($P<0.889$)		
Gender of household heads (%)		
Male-headed households = 1	86.09	88.21
Female-headed households = 0	17.67	11.79
1.083 ($P<0.298$)		
Education of household heads (%)		
Illiterate	-	0.18
Primary school	75.38	81.22

High school	24.62	18.60
Intermediate	-	0.18
Graduation and above	-	-
6.668 ($P<0.036$)		
Family structure (%)		
Nuclear =1	41.92	45.49
Joint = 0	58.08	54.51
1.393 ($P<0.238$)		
Landholding (%)		
Landless (=0)	-	0.55
Marginal (<1 ha)	19.55	30.57
Small (1–2 ha)	32.14	27.99
Medium (>2–4 ha)	28.01	24.86
Mean	3.00	2.66
SD	2.65	2.88
Large (>4 ha.)	20.30	16.02
21.196 ($P<0.000$)		
Total livestock units (TLUs)** (%)		
No livestock	24.81	24.31
Small livestock holders (0.01–2.00 TLUs)	29.70	38.31
Medium livestock holders (2.01 – 5.0 TLUs)	34.02	30.94
Large livestock holders >5.00 TLUs	11.47	6.45
Mean	2.67	2.03
SD	3.14	2.09
14.245 ($P<0.003$)		
NFI Source (%)		
Yes	32.89	29.65
No	67.11	70.35
961 ($P<0.161$)		

Figures in parentheses indicate standard deviation. * Categorization based on cumulative square root frequency method; ** TLUs: 1 bovine = 1.0; 1 goat/sheep = 0.1; 1 poultry = 0.01

Supplementary Table 4 Variance inflation factor		
Variable	VIF	1/VIF
Education level (No of classes~d)	1.21	0.83
Age no. of years	1.17	0.85
Landholding in ha	1.94	0.51
Family structure~i	1.07	0.94
Total livestock unit~U	4.78	0.21
Non-farm income source Y~0	1.05	0.95
Gender male~0	1.04	0.96
Beneficiaries~D	1.03	0.97

Land holding*Total livestock unit	3.82	0.26
Education*Net farm income	3.05	0.33
Mean VIF	2.09	

Supplementary Table 5 Balancing of co-variates in NNM (1 NM)						
Variable	Treated	Control	%bias	t	P>t	V(T)/V(C)
Gender; Male1, Female 0	0.862	0.864	-0.6	0.09	0.929	1.01
Age; no. of years	45.357	45.224	1.1	0.18	0.861	0.85
Education level (No. of classes completed)	4.251	4.430	-9	1.43	0.153	0.77*
Family structure; Nuclear 1, Joint 0	0.411	0.407	0.8	0.12	0.901	1
Non-farm income; source Y1 N0	0.333	0.327	1.2	0.19	0.846	1.01
Total livestock units	2.558	2.608	-1.7	-0.3	0.765	0.85
Land-holding (ha)	2.999	2.803	7.1	0.99	0.322	0.50*
Interaction term (Education level * Non-farm income Source)	0.951	0.897	2.3	0.47	0.637	1.07
Interaction term (Land-holding size * Total livestock units)	8.787	7.542	9.3	1.59	0.113	1.30*
Ps R ² LR chi ² P>chi ² MeanBias						
MedBias			B	R	%Var	
0.009 13.03 0.161 3.7						
1.7			21.8	1.34	33	

Supplementary Table 6 Balancing of co-variates in NNM (NN = 5)						
Variable	Mean		%bi	t-test		V(T)/V(C)
	Treat ed	Contr ol		t	p>t	
Gender; Male1, Female 0	0.862	0.857	1.5	0.23	0.819	0.97
Age; no. of yeardrs	45.357	44.804	4.6	0.74	0.457	0.90
Education level (No of classes completed)	4.251	4.294	-2.2	0.34	0.32	0.73*
Family structure; Nuclear, Joint 0	0.411	0.434	-4.7	0.77	0.43	0.99

Non-farm income source; Y1 N0	0.333	0.344	-2.5	0.40	-	0.6	89	0.98
Total livestock units	2.559	2.512	1.6	0.29	0.7	69	0.99	
Landholding (ha)	2.999	2.835	5.9	0.93	0.3	51	0.73*	
Interaction term (Education level × Non-farm income source)	0.951	0.991	-1.7	0.35	-	0.7	29	1.07
Interaction term (Land-holding size × Total livestock units)	8.787	8.175	4.6	0.70	0.4	83	0.84*	
Ps R ²	LR chi ²	P>chi ²	Mean Bias	Med Bias	B	R	%Var	
0.002	2.29	0.986	3.3	2.5	9.3	0.80	33	

Supplementary Table 7 Heterogeneity effects of KVK interventions across co-variate groups				
	Coeff.	t-cal	Baseline HHNI (control)	% increase in HHNI
Gender; Male1 Female 0				
Male	429651.9 (116415.4)	3.69***	367221.6	117.00
Female	110976 (96336.03)	1.15	312664.1	35.49
Age no. of years				
Young (20–37) (%)	416590.3 (250622.8)	1.66*	410454.7	101.49
Middle-aged (38–55) (%)	325040.3 (119481.1)	2.72***	293597	110.71
Old (>55) (%)	433370.2 (261220.4)	1.66***	470970.1	92.02
Education level (No. of classes completed)				
Illiterate	--	--	--	--
Primary school	414890.7 (104417.6)	3.97***	362721.7	114.38
High school	315965.3 (301230.3)	1.05	320602.7	98.55
Intermediate	--	--	--	--
Graduation and above	--	--	--	--
Family structure				
Nuclear	378614.8 (181553.6)	2.09**	342191.9	110.64
Joint	334421.6 (113854.5)	2.94***	376235.5	88.89
Non-farm income source				
Yes	414106.8	1.47	364713.4	113.54

Supplementary Table 7 Heterogeneity effects of KVK interventions across co-variate groups				
	Coeff.	t-cal	Baseline HHNI (control)	% increase in HHNI
No	(282317.9) 346877.4 (77013.24)	4.50***	359066	96.61
Livestock holding (TLU)				
Small livestock holders	247156.3 (27163.58)	9.10***	288064.4	85.80
Medium livestock holders (2.01 – 5.0 TLUs)	440190.1 (262794.8)	1.68*	435347.2	101.12
Large livestock holders >5.00 TLUs	750579.8 (594281.3)	1.26	683044.5	109.89
Landholding (ha)				
Landless (=0)	--	--		
Marginal (<1 ha)	253408.9 (47092.54)	5.38***	246740.7	102.70
Small (1–2 ha)	286066.9 (43175.77)	6.63***	284096.5	100.69
Medium (>2 to 4 ha)	351139.6 (192054.3)	1.83*	481502.5	72.93
Large (>4 ha)	540048.6 (482826.9)	1.12	500089	107.99