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**Malaria and pneumonia effects on rice, vanilla production and rural household income in Madagascar: case of the Sava region**

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Appendix A1: Characteristics of households surveyed in percentage (N=975)

Roof material	
Sheet metal	64.72
Palm or vegetal	29.65
Wood	4.31
Shaft	0.51
Other	0.82
Wall material	
Vegetal	46.77
Wood	44.21
Sheet metal	3.59
Carton	2.87
Stone	1.54
Bricks	0.62
Earth	0.41
Lighting mode	
Lantern oil	64.92
Solar panel	16.62
Battery	16.10
Candle	1.13
Individual generator	0.82
Common generator	0.10
Wood	0.10
JIRAMA*	0.10
None	0.10
Water source	
Dug well	39.59

Roof material	
other source (river/canal/stream)	22.77
Public fountain	21.85
Rainwater	13.54
Tap	1.95
Water seller	0.21
Other	0.10
Combustible	
Wood picked up by the household	76.82
Charcoal purchased	9.95
Wood purchased	6.87
Charcoal produced by household	6.05
Petrol	0.21
Other	0.10
Toilets	
Individual pit latrine	51.38
None	28.92
Common pit latrine	18.87
Flush toilets	0.82

Note: \* Water and electricity producer

A2: Care seeking in case of malaria or pneumonia

Malaria		Pneumonia	
Care seeking	n=197 (100%)	Care seeking	n=41 (100%)
Health facility	67 (34.01)	Health facility	6 (14.63)
Private doctor	39 (19.80)	CHW	5 (12.20)
CHW*	27 (13.71)	Public hospital	4 (9.76)
Public hospital	20 (10.15)	Private doctor	4 (9.76)
Private dispensary	9 (4.57)	Private hospital	3 (7.32)
Private hospital	6 (3.05)	Private dispensary	0 (0)
Others	29 (14.72)	Others	19 (46.34)

Note: \*CHW: Community Health Worker

## A3: Health production function

Variables	Malaria		Pneumonia	
	Coef	Pr > t	Coef	Pr > t
Constant	0,01	0,95	0,04	0,61
Area	0,01	0,42	0,00	0,34
Income	0,01	0,42	0,00	0,78
Kitchen serves at the same time as bedroom no (reference)				
Yes	0,02	0,80	0,05*	0,07
Fireplace no (reference)				
Yes	0,01	0,81	0,02	0,20
Roof material				
Vegetal (reference)				
Sheet metal	0,02	0,66	0,04**	0,04
Palm	0,16	0,12	0,03	0,48
Wood	0,11	0,32	0,07	0,13
Shaft	-0,17	0,49	-0,07	0,53
Others	-0,01	0,96	-0,02	0,80
Wall material				
Vegetal (reference)				
Wood	-0,02	0,64	-0,03*	0,07
Others	0,03	0,79	0,00	0,97
Carton	-0,13	0,26	-0,03	0,61
Bricks	-0,22	0,37	-0,07	0,51
Stone	0,03	0,86	0,00	0,96
Earth	0,18	0,56	-0,05	0,74

Variables	Malaria		Pneumonia	
	Coef	Pr > t	Coef	Pr > t
Lighting				
Lantern oil (reference)				
Battery	0,07	0,17	0,00	0,90
Solar panel	0,04	0,42	0,01	0,62
Candle	-0,06	0,73	0,08	0,36
Individual generator	-0,10	0,63	-0,04	0,67
Common generator	-0,01	0,99	-0,02	0,95
Wood	0,25	0,67	0,06	0,82
Jirama	1,57***	0,00	-0,07	0,76
None	-0,30	0,58	-0,01	0,96
Provenance of water				
Dug well (reference)				
Rainwater	0,15**	0,01	-0,01	0,73
Public fountain	-0,04	0,39	0,00	0,97
Tap	0,08	0,59	0,04	0,56
other source				
(river/canal/stream)	0,06	0,22	-0,03	0,21
Other	-0,21	0,69	-0,09	0,71
Water seller	0,78	0,14	-0,05	0,82
Combustible				
Wood picked up by the household (reference)				
Wood purchased	-0,13*	0,08	-0,06*	0,08
Charcoal produced by household	-0,16**	0,05	-0,05	0,13

Variables	Malaria		Pneumonia	
	Coef	Pr > t	Coef	Pr > t
Charcoal purchased	-0,07	0,29	-0,03	0,40
Others	-0,13	0,81	-0,10	0,69
Petrol	-0,29	0,47	-0,06	0,75
<b>Toilets</b>				
None (reference)				
Individual pit latrine	-0,04	0,42	-0,02	0,44
Common pit latrine	0,02	0,67	0,02	0,34
Flush toilets	-0,13	0,52	-0,06	0,51
<b>Practice of agricultural activity</b>				
Yes (reference)				
No	-0,16	0,68	-0,02	0,93
<b>Use of extra-familial labour <math>L_{ef}</math></b>				
No (reference)				
Yes	-0,01	0,81	0,01	0,46

## Appendix A4: Health care in case of malaria and pneumonia per district

Malaria			
Health care	Sambava n=46 (100 %)	Andapa n=72 (100 %)	Antalaha n=79 (100 %)
Health centre	13 (28,26)	30 (41,67)	24 (30,38)
Private doctor	18 (39,13)	15 (20,83)	6 (7,59)
CHW	0 (0,00)	3 (4,17)	24 (30,38)
Public hospital	4 (8,70)	4 (5,56)	12 (15,19)
Private dispensary	3 (6,52)	3 (4,17)	3 (3,80)
Private hospital	0 (0,00)	4 (5,56)	2 (2,53)
Others	8 (17,39)	13 (18,05)	8 (10,13)
Pneumonia			
Health care	Sambava n=16 (100 %)	Andapa n=16 (100 %)	Antalaha n=9 (100 %)
Health centre	2 (12,50)	3 (18,75)	1 (11,11)
Private doctor	2 (12,50)	2 (12,50)	0 (0,00)
CHW	1 (6,25)	1 (6,25)	3 (33,33)
Public hospital	1 (6,25)	2 (12,50)	1 (11,11)
Private dispensary	2 (12,50)	0 (0,00)	0 (0,00)
Private hospital	2 (12,50)	1 (6,25)	0 (0,00)
Others	6 (37,5)	7 (43,75)	4 (44,44)