Figure S1. Photo of the "La Orduña" shade coffee plantation.
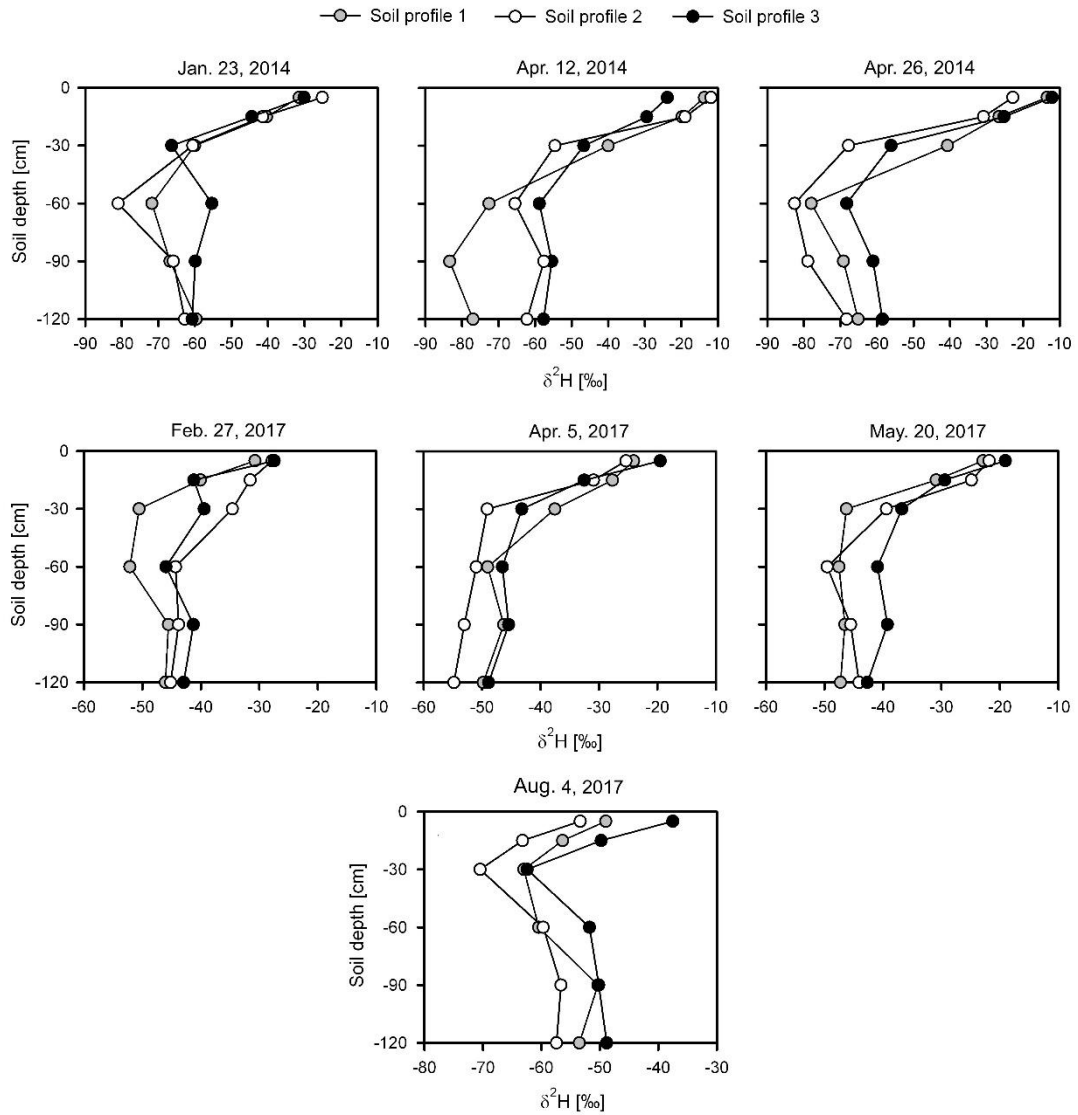
Figure S2. Hydrogen stable isotope ratios of the bulk soil water collected at different depths along the soil profile 1 (grey filled circles), soil profile 2 (open circles) and soil profile 3 (black filled circles) on January 23, April 12 and April 26, 2014 (dry season), February 27, April 5 and May 20, 2017 (dry season) and August 4, 2017 (wet season)

Table S1. Relative contributions of the different water sources to plant xylem water (mean ± SD) per species and for the three sampling dates performed in 2014 dry season. Contributions were derived with the MixSIAR Bayesian mixing model framework, using the 'informative' prior approach

	Sampling 1 (Jan. 23, 2014)				Sampling 2 (Apr. 11, 2014)				Sampling 3 (Apr. 26, 2014)			
	Shade trees			Coffee shrubs	Shade trees			Coffee shrubs	Shade trees			Coffee shrubs
	L. guatemalensis	*T. micrantha*	*Inga vera*	*C. arabica*	*L. guatemalensis*	*T. micrantha*	*Inga vera*	*C. arabica*	*L. guatemalensis*	*T. micrantha*	*Inga vera*	*C. arabica*
Rain water	0.01±0.02	0.01±0.02	0.02±0.04	0.20±0.17	0.01±0.02	0.01±0.03	0.03±0.07	0.06±0.14	0.02±0.03	0.02±0.04	0.03±0.06	0.03±0.10
Shallow soil water	0.05±0.07	0.03±0.06	0.11±0.12	0.28±0.30	0.08±0.09	0.13±0.12	0.33±0.17	**0.76±0.24**	0.13±0.12	0.15±0.13	0.27±0.17	**0.90±0.16**
Deep soil water	**0.95±0.08**	**0.96±0.06**	**0.87±0.12**	**0.52±0.17**	**0.91±0.15**	**0.85±0.12**	**0.64±0.15**	0.18±0.13	**0.86±0.12**	**0.83±0.13**	**0.70±0.16**	0.07±0.09

The water source that contributes more to tree transpiration is highlighted in bold for each species and sampling date.

Table S2. Relative contributions of the different water sources to plant xylem water (mean ± SD) per species and for the three sampling dates performed in 2014 dry season. Contributions were derived with the MixSIAR Bayesian mixing model framework, using the 'non-informative' prior approach

| | Sampling 1 (Jan. 23, 2014) | | | | Sampling 2 (Apr. 11, 2014) | | | | Sampling 3 (Apr. 26, 2014) | | | |
| | Shade trees | | | Coffee shrubs | Shade trees | | | Coffee shrubs | Shade trees | | | Coffee shrubs |
	L. guatemalensis	*T. micrantha*	*Inga vera*	*C. arabica*	*L. guatemalensis*	*T. micrantha*	*Inga vera*	*C. arabica*	*L. guatemalensis*	*T. micrantha*	*Inga vera*	*C. arabica*
Rain water	0.03±0.04	0.02±0.03	0.06±0.06	0.29±0.13	0.03±0.04	0.05±0.05	0.11±0.11	0.27±0.22	0.06±0.06	0.06±0.07	0.09±0.09	0.26±0.24
Shallow soil water	0.03±0.05	0.02±0.04	0.06±0.09	0.12±0.18	0.05±0.06	0.08±0.09	0.21±0.18	**0.44±0.36**	0.09±0.10	0.10±0.10	0.17±0.16	**0.58±0.37**
Deep soil water	**0.94±0.12**	**0.96±0.05**	**0.88±0.10**	**0.59±0.12**	**0.92±0.08**	**0.87±0.10**	**0.68±0.14**	0.29±0.17	**0.86±0.11**	**0.84±0.11**	**0.74±0.14**	0.16±0.14

The water source that contributes more to tree transpiration is highlighted in bold for each species and sampling date.

Table S3. Relative contributions of the different water sources to plant xylem water (mean ± SD) per species and for the three sampling dates performed in the 2017 dry season. Contributions were derived with the MixSIAR Bayesian mixing model framework, using the 'informative' prior approach

| | Sampling 1 (Feb. 27, 2017) | | | | Sampling 2 (Apr. 5, 2017) | | | | Sampling 3 (May 20, 2017) | | | |
| | Shade trees | | | Coffee shrubs | Shade trees | | | Coffee shrubs | Shade trees | | | Coffee shrubs |
	L. guatemalensis	*T. micrantha*	*Inga vera*	*C. arabica*	*L. guatemalensis*	*T. micrantha*	*Inga vera*	*C. arabica*	*L. guatemalensis*	*T. micrantha*	*Inga vera*	*C. arabica*
Rain water	0.00±0.01	0.01±0.02	0.01±0.02	0.14±0.14	0.06±0.08	0.02±0.04	0.01±0.02	**0.44±0.16**	0.01±0.03	0.01±0.02	0.00±0.01	0.04±0.10
Shallow soil water	0.04±0.09	0.11±0.18	0.14±0.22	**0.47±0.40**	0.25±0.21	0.25±0.23	0.06±0.09	0.24±0.27	0.07±0.12	0.08±0.15	0.02±0.05	**0.91±0.21**
Deep soil water	**0.95±0.09**	**0.89±0.18**	**0.86±0.22**	0.39±0.28	**0.70±0.19**	**0.74±0.23**	**0.93±0.10**	0.32±0.15	**0.92±0.12**	**0.92±0.15**	**0.98±0.05**	0.06±0.12

The water source that contributes more to tree transpiration is highlighted in bold for each species and sampling date.

Table S4. Relative contributions of the different water sources to plant xylem water (mean ± SD) per species and for the three sampling dates performed in the 2017 dry season. Contributions were derived with the MixSIAR Bayesian mixing model framework, using the 'non-informative' prior approach

	Sampling 1 (Feb. 27, 2017)				Sampling 2 (Apr. 5, 2017)				Sampling 3 (May 20, 2017)			
	Shade trees			Coffee shrubs	Shade trees			Coffee shrubs	Shade trees			Coffee shrubs
	L. guatemalensis	*T. micrantha*	*Inga vera*	*C. arabica*	*L. guatemalensis*	*T. micrantha*	*Inga vera*	*C. arabica*	*L. guatemalensis*	*T. micrantha*	*Inga vera*	*C. arabica*
Rain water	0.01±0.02	0.02±0.03	0.02±0.03	0.23±0.12	0.11±0.08	0.06±0.06	0.04±0.04	**0.48±0.10**	0.01±0.03	0.01±0.03	0.01±0.02	0.08±0.15
Shallow soil water	0.03±0.06	0.08±0.14	0.10±0.19	0.25±0.32	0.15±0.15	0.16±0.17	0.07±0.09	0.17±0.17	0.05±0.10	0.05±0.11	0.01±0.04	**0.85±0.29**
Deep soil water	**0.95±0.07**	**0.90±0.15**	**0.88±0.19**	**0.53±0.23**	**0.74±0.13**	**0.77±0.16**	**0.88±0.10**	0.36±0.10	**0.94±0.11**	**0.94±0.12**	**0.98±0.04**	0.08±0.16

The water source that contributes more to tree transpiration is highlighted in bold for each species and sampling date.

Table S5. Relative contributions of the different water sources to plant xylem water (mean ± SD) per species and for the sampling performed in the 2017 wet season. Contributions were derived with the MixSIAR Bayesian mixing model framework, using the 'informative' prior approach

	Sampling (Aug.4, 2017)			
	Shade trees			Coffee shrubs
	L. guatemalensis	*T. micrantha*	*Inga vera*	*C. arabica*
Rain water	0.07±0.11	0.01±0.02	0.01±0.04	**0.69±0.22**
Shallow soil water	0.30±0.39	**0.72±0.39**	0.29±0.36	0.18±0.21
Deep soil water	**0.64±0.37**	0.27±0.38	**0.70±0.36**	0.14±0.17

The water source that contributes more to tree transpiration is highlighted in bold for each species and sampling date.

Table S6. Relative contributions of the different water sources to plant xylem water (mean ± SD) per species and for the sampling performed in the 2017 wet season. Contributions were derived with the MixSIAR Bayesian mixing model framework, using the 'non-informative' prior approach

	Sampling (Aug.4, 2017)			
	Shade trees			Coffee shrubs
	L. guatemalensis	*T. micrantha*	*Inga vera*	*C. arabica*
Rain water	0.11±0.12	0.02±0.04	0.04±0.06	**0.69±0.22**
Shallow soil water	0.25±0.34	**0.63±0.40**	0.27±0.34	0.16±0.19
Deep soil water	**0.64±0.32**	0.35±0.39	**0.69±0.33**	0.15±0.17

The water source that contributes more to tree transpiration is highlighted in bold for each species and sampling date.