SUPPLEMENTARY MATERIALS

Appendix S1. Description of the intervention

Table S1. Description of the workshops

Stages	Objective	Tool	Time	Description
(i) Introduction	To break the ice and facilitate participation	Puzzle-solving	15 min	Each participant is given a piece of a jigsaw puzzle and directed to find other participants with pieces belonging to the same puzzle (out of a total of 6 puzzles). When complete, each puzzle produces a picture of the following: rainfall, sunshine, wind, river, tree and agricultural field. The participants then have to comment on the importance of these elements for their daily livelihoods.
(ii) Definition of key concepts	To define the concept of *climate* and introduce the notion of *climate change*	Brainstorming	20 min	The audience is asked to define the concept of *climate*. All the ideas discussed are recorded on a flip chart. Once enough topics have been discussed to enable the concept to be defined, the notion of *climate change* is introduced in relation to the topics shown on the flip chart.
(iii) Technical information on the topic of climate change	To present up-to-date information on climate change as framed by the media	Exposition	40 min	The scientific notion of climate change is introduced to the audience by showing a sequence of 20 pictures and graphs obtained from the mass media (e.g. Gore 2009). After providing some insights into the notion of global warming as an anthropogenic phenomenon, the audience is presented with information on the climatic changes reported in Bolivian Amazonia (specifically: decreased rainfall, increased temperatures, increased flood frequency, increased cold season duration and increased cold season strength).
		Game about past-present scenarios	20 min	Each participant is given a picture of a landscape and told to find another participant with a counterpart of the same picture (e.g. flooded *vs* non-flooded river; humid *vs* dry forest). Once the connected pairs of pictures are found, the audience is asked to discern between past and present image, and a possible link with climate change.
		Brainstorming	20 min	In order to summarize the contents of the presentation, the audience is asked to brainstorm on all the things learned about the concept of *climate change*.
		Questions	20 min	The audience is given the opportunity to pose questions to the convener about climate change and about the workshop.

Appendix S2. Validation of the method

To validate the method, we tested the random assignment of the villages (to either treatment or control groups) by running a logistic regression of each of the outcome variables against a dummy variable for the treatment, using only information from the pre-intervention survey (Table S2.1).

Because not all individuals assigned to the treatment village ended up attending the workshop, but they nonetheless undertook both surveys (post- and pre-), we analyzed data in three ways: (i) all individuals not attending the workshop (n=350), regardless of whether from treatment or control villages, were considered as the *control* group against a *treatment* (n=74) including only people who attended the workshop; (ii) all individuals in treatment villages not attending the workshop (n=167) were disregarded, and only the individuals originally assigned to the control villages (n=183) were considered as *controls*; and (iii) all individuals in the treatment villages were considered the treatment group, both those who did and did not attend the workshops (n=241). Results did not differ significantly for the three options, which suggests that there was no significant information transmission or leakage in treatment villages from the people who attended the workshop to those who did not. For this reason, only results for option (i) are presented in the paper.

Since the number of people in the control and treatment groups differed, we also tested for sampling effects. Specifically, we conducted the same analysis with a randomly selected sub-sample of people in the control group (n=96). Results of both analyses did not differ significantly (see Table S2.2).

Table S2.1 Test for the Random assignment of treatment and controls

Outcome Variable	Coefficient	Standard Error	Pseudo-R^2	p-value
Rainfall	0.390	0.281	0.0038	0.166
Temperature	-0.362	0.303	0.0031	0.233
Flood frequency	0.426	0.362	0.0043	0.239
Cold season duration	0.516	0.354	0.0066	0.145
Cold season strength	0.506	0.353	0.0062	0.151

Note: Outcome variables (previously transformed into *agreement* measures, see Section 2.6) logistically regressed against a *treatment* dummy variable, using only information from the pre-intervention survey. * and **, significant at ≤0.05 and ≤0.01, respectively. See Table 1 for definition of variables.

Table S2.2. Difference-in-Difference multivariate estimations: Effects of intervention on outcome variables (n=848) using other control-treatment groupings

Results using other control-treatment groupings			
Grouping (i) $n_{control}$ = 350 $n_{treatment}$ = 74	Outcome Variable	Robustness	
		[1]	[2]
	Rainfall	-0.185 (±0.371)	-0.273 (±0.454)
	Temperature	0.431 (±0.390)	0.523 (±0.648)
	Flood frequency	-0.691 (±0.622)	-0.106 (±0.466)
	Cold season duration	-1.022 (±0.559)	-1.142 (±0.501)*
	Cold season strength	-0.308 (±0.462)	-0.353 (±0.536)
Grouping (ii) $n_{control}$ = 183 $n_{treatment}$ = 74	Outcome Variable	Robustness	
		[1]	[2]
	Rainfall	-0.232 (±0.403)	-0.415 (±0.420)
	Temperature	0.322 (±0.413)	0.411 (±0.731)
	Flood frequency	-0.353 (±0.654)	-0.487 (±0.720)
	Cold season duration	-1.254 (±0.582)*	-1.455 (±0.514)**
	Cold season strength	-0.273 (±0.494)	-0.345 (±0.580)
Grouping (iii) $n_{control}$ = 183 $n_{treatment}$ = 241	Outcome Variable	Robustness	
		[1]	[2]
	Rainfall	-0.142 (±0.291)	-0.321 (±0.257)
	Temperature	-0.019 (±0.288)	0.049 (±0.544)
	Flood frequency	-0.560 (±0.497)	-0.638 (±0.756)
	Cold season duration	-0.862 (±0.414)*	-0.967 (±0.567)
	Cold season strength	-0.056 (±0.367)	-0.207 (±0.597)
Results using a sub-sample of controls			
Grouping (iv) $n_{control}$ = 96 $n_{treatment}$ = 96	Outcome Variable	Robustness	Robustness
		[1]	[1]
	Rainfall	-0.149 (±0.433)	-0.263 (±0.434)
	Temperature	0.760 (±0.447)	0.762 (±0.704)
	Flood frequency	1.237 (±0.798)	1.395(±0.914)
	Cold season duration	-0.553 (±0.647)	-0.834 (±0.583)
	Cold season strength	0.596 (±0.542)	0.527 (±0.364)

Note: Outcome variables (previously transformed into *agreement* measures, see Section 2.6) logistically regressed against *treatment* and *after* binary dummy variables, and interaction of treatment*after. Coefficient reported (Standard Error in parenthesis) refers to the difference-in-difference coefficient (treatment*after). Treatment = 1 if the person received treatment; treatment = 0 if the person was control. After = 1 if year 2009 (after intervention); after = 0 if year = 2008 (before intervention). [1] Raw model. Controls for [2] A full set of village dummy variables. * and **, significant at ≤0.05 and ≤0.01, respectively. See Table 1 for definition of variables.

Appendix S3. Descriptive comparison of changes in climatic perceptions

The bivariate analysis of the outcome variable (i.e. agreement) allows us to get a preliminary assessment of the magnitude of effect of the intervention. Table S3 shows the results of this analysis for the five weather features, both before and after the workshop and for both treatment and control groups.

Table S3. Analysis of change in outcome variables (n=848 = 424 people*2 surveys)

Outcome Variables	**Groups**		
	[1]	**[2]**	**[3]**
	Control (n=350)	**Treatment** (n=74)	**Δ (Treatment-Control)**
Rainfall			
Before Treatment	48%	58%	10%
After Treatment	64%	69%	5%
Δ (After – Before)	16%	11%	-5%
Temperature			
Before Treatment	36%	29%	-7%
After Treatment	37%	39%	2%
Δ (After – Before)	1%	10%	9%
Flood frequency			
Before Treatment	13%	19%	6%
After Treatment	5%	7%	2%
Δ (After – Before)	-8%	-12%	-4%
Cold season duration			
Before Treatment	14%	21%	7%
After Treatment	17%	11%	-6%
Δ (After – Before)	3%	-10%	-13%
Cold season strength			
Before Treatment	13%	21%	8%
After Treatment	20%	24%	4%
Δ (After – Before)	7%	3%	-4%

Note: All the outcome variables have been transformed into binary surrogates for *agreement*, measuring if the individual perceptions reported matched the information presented in the workshop (coded as 1) or not (coded as 0). The numbers in each cell show the agreement both before and after the intervention, and in both control and treatment individuals.

Appendix S4. Descriptive ethnoclimatological knowledge of the Tsimane’

Table S4. Ethnoclimatological knowledge held by the Tsimane’

Generic use	Indicator type	Scientific name	Tsimane’ name	English name	Description[1]
Flood predictor	Phytoindicator	*Chorisia speciosa*	Vojshinaj	Silk Floss Tree	Its early fructification indicates that there will be a flood.
Flood predictor	Phytoindicator	*Citrus sinensis*	Maraca	Sweet Orange	Its early ripening indicates that there will be a flood.
Flood predictor	Zooindicator	*Amazilia saucerrottei*	Bista', chu'chu'	Steely-vented Hummingbird	The altitude of the flight of the bird (over the river) indicates the height of an upcoming flood. Other indigenous peoples in Bolivia are reported to predict the height of floods by looking at the behavior of birds (Claverías 2010).
Flood predictor	Zooindicator	*Atta* spp.	Bicoroi'	Leafcutter ants	Unusual concentrations of these ants flying in the forest indicate an upcoming flood in the short term (1-3 days).
Flood predictor	Zooindicator	*Panthera onca*	Itsiqui'	Jaguar	Its deep roar by night indicates that there will be a flood the day after. There is the extended belief that the jaguar actually invokes the flood.
Livelihood indicator	Phytoindicator	*Sapium marmieri*	Mujpe	Leche leche	The falling of its leaves indicates a good time to start clearing the agricultural plots.
Livelihood indicator	Phytoindicator	*Tetragastris altissima*	Na’fa	Isigo Tree	Its flowering indicates that the rainy-season honey is ready to be harvested.
Livelihood indicator	Zooindicator	Cicadidae spp.	Rojo'	Cicadas	The singing of the cicadas announces the timing for opening the agricultural plots. Mosetenes from Bolivian Amazonia share this belief (Ferreira 2011). Also the Kariñas in Venezuela use the Cicadas as a bioindicator for the same purpose (Olivares et al. 2012).
Rainfall predictor	Astronomical	---	Cava’vare	Galactic halo	When a visible galactic halo called *cava' vare* appears around the stars, rains will arrive in the following 1-3 days. Similar halos are observed in the Andes with the Pleiades for rainfall forecasting (Orlove 2000).
Rainfall predictor	Astronomical	---	Sãñi	Moon eclipse	In the Tsimane’ culture, a moon eclipse is perceived as a signal for an unusually dry year and poor agricultural yields. Such perception is shared with the Takana indigenous peoples from Bolivian Amazonia (Eibamaz 2010).
Rainfall predictor	Atmospheric	---	Japacjoi’ (ĉhibinmayedye’)	Three-day continued heat	Three unusually hot days means that the fourth day will be rainy.
Rainfall predictor	Atmospheric	---	Pururu	Night thunders	Hearing thunders by night means that the day after will be rainy.
Rainfall predictor	Phytoindicator	*Cecropia membranacea*	Tyej	Pumpwood	When it is going to rain, the leaves of this tree turn over. Such an observation has been also reported for the Takana indigenous group from Bolivian Amazonia (Eibamaz 2010).

Rainfall predictor	Phytoindicator	*Prunus* spp.	Iyason	---	Spiritual beliefs indicate that the fell of the fruits of this tree calls for big rains to come.
Rainfall predictor	Zooindicator	*Alouatta sara*	U'ru	Bolivian red howler	According to spiritual beliefs, when many of them sing together, they are invocating the rain. Used to forecast rainfall in the short term (1-3 days). Such belief is shared with indigenous peoples living in Cordillera Escalera, Peru (Silva 2013).
Rainfall predictor	Zooindicator	*Rhinella marina*	Âbäbä	Cane toad	When toads are abundant in the dry season, it will be a rainy year. Such a belief is shared by many indigenous communities in the Andes (Claverías 2010).
Rainfall predictor	Zooindicator	Formicidae	Cahtyityij	Ants	When you see many holes on the ground made by ants, stormy rains will arrive in the following 1-3 days.
Rainfall predictor	Zooindicator	*Pachycondyla* spp.	Tyiquiqui'	Bulldog ants	When many bulldog ants walk very quickly in line in the forest, it will rain by night. The same behavior is reported as a bioindicator for the same generic use by the Nasua indigenous group (Colombia), but for a different ant, namely *Atta cephalotes* (Ramos-García et al. 2011).
Rainfall predictor	Zooindicator	*Ramphastos toco*	Yovijvi	Toco Toucan	When many of them sing together, it indicates that in some hours it will be rainy. Such an observation has also been reported for the Takana indigenous peoples of Bolivian Amazonia (Eibamaz 2010).
Rainfall predictor	Zooindicator	*Turdus amaurochalinus*	Oc'	Creamy-billed Thrush	When this bird sings, it calls the rain.
Seasonal indicator	Phytoindicator	*Acacia loretensis*	Shara'	CariCari Tree	Its flowering signals the onset of the rainy season.
Seasonal indicator	Phytoindicator	*Bactris gasipaes*	Vä'ij	Peach Palm	Its fructification signals the end of the rainy season and the start of the Tsimane' seasonal calendar. Many people signal that the fructification of this tree has been late in recent decades (Fernández-Llamazares et al. 2014). Changes in the phenology of *B. gasipaes* have also been reported by other Amazonian indigenous groups (Echeverri 2010).
Seasonal indicator	Phytoindicator	*Cecropia concolor*	Quiruru'	Pumpwood	Its flowering coincides with the arrival of the first migratory fishes in the Maniqui River (Fernández-Llamazares et al. 2014).
Seasonal indicator	Phytoindicator	Leguminosae	I'seji	---	When its flowering occurs, the cold season is at its middle point.
Seasonal indicator	Phytoindicator	*Mauritia flexuosa*	Tyutyura'	Moriche Palm	Its flowering indicates the onset of the rainy season.
Seasonal indicator	Phytoindicator	*Pourouma cecropiifolia*	Movai	Amazon Tree-grape	Its flowering indicates that the rainy-season honey is ready to be harvested.
Seasonal indicator	Phytoindicator	*Salacia sp.*	Tiribui	Guapomo	Its flowering indicates the onset of the rainy season.
Seasonal indicator	Phytoindicator	*Swietenia*	Chura'	Big-leaf	Multi-indicator. Its flowering indicates the onset of the rainy

		macrophylla		Mahogany	season. When its seeds fly with the wind, the dry season starts.
Seasonal indicator	Phytoindicator	*Triplaris americana*	Chij	Ant Tree	Its flowering indicates the onset of the cold season.
Seasonal indicator	Zooindicator	*Columba subvinacea*	Oto'	Ruddy Pigeon	Its singing indicates the onset of the rainy season.
Seasonal indicator	Zooindicator	*Glaucidium brasilianum*	Cayovore	Ferruginous Pygmy Owl	Its singing indicates the onset of the rainy season.
Seasonal indicator	Zooindicator	Lumbricidae	Oya', shiri'	Earthworms	When there are few worms in the agricultural plots, it means that the arrival of the migratory fishes is approaching.
Seasonal indicator	Zooindicator	*Momotus momota*	Ururum, uaruv	Blue-crowned Motmot	Its singing indicates the onset of the rainy season.
Seasonal indicator	Zooindicator	*Pitangus sulphuratus*	Fidiri	Great Kiskadee	Its singing indicates the onset of the rainy season.
Storm predictor	Phytoindicator	*Ceiba pentandra*	O'ba	Great Kapok Tree	Its flowering is thought to attract big storms. Mosetenes from Bolivian Amazonia believe that this tree calls the water, because it has a puffed shape in its trunk. They also believe that when this tree does not flower, rice won't grow much (Ferreira 2011).
Storm predictor	Phytoindicator	*Heliocarpus americanus*	Mü'	Balsamillo Tree	Its flowering indicates that there will be a big storm in the following 3 days.
Storm predictor	Phytoindicator	*Ochroma pyramidale*	Cajñere'	Balsa Tree	Its flowering indicates a big storm coming.
Storm predictor	Zooindicator	*Ortalis motmot*	Mara'se	Little Chachalaca	Its singing indicates the arrival of a big storm in the short term (1-3 days).
Sunny weather predictor	Astronomical	---	Dyidyista' ivaj	Smiling (U-shaped) moon	In the rainy season, when a quarter moon looks U-shaped (i.e. smiling), the following day will be sunny. In Hawaiian astrology, this moon is called the dry moon because "*it holds the water*" (NASA 2014).
Sunny weather predictor	Atmospheric	---	Dyicba'babdye'	Morning fog over the river	A thick fog over the river at dawn means that the day will be sunny.
Sunny weather predictor	Phytoindicator	*Vernonia patens*	O'ojvi	Paichane	Its flowering indicates that the following day will be sunny.
Sunny weather predictor	Zooindicator	*Cerdocyon thous*	Va'ajva'aj	Crab-eating fox	When the fox signs in the night, the following day will be sunny.
Sunny weather predictor	Zooindicator	*Spizaetus tyrannus*	Ocoriyo	Black Haw Eagle	Its singing brings sunny weather. There is the extended belief of the singing of *Spizaetus tyrannus* as being a signal of good luck.

Note: [1] See Appendix S5 in the Supplementary Materials for the complete Reference List included in this table

Appendix S5. Additional references

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