Supplementary Material：
Understanding Household Energy Transitions: From Evaluating Single Cookstoves to “Clean Stacking” Alternatives

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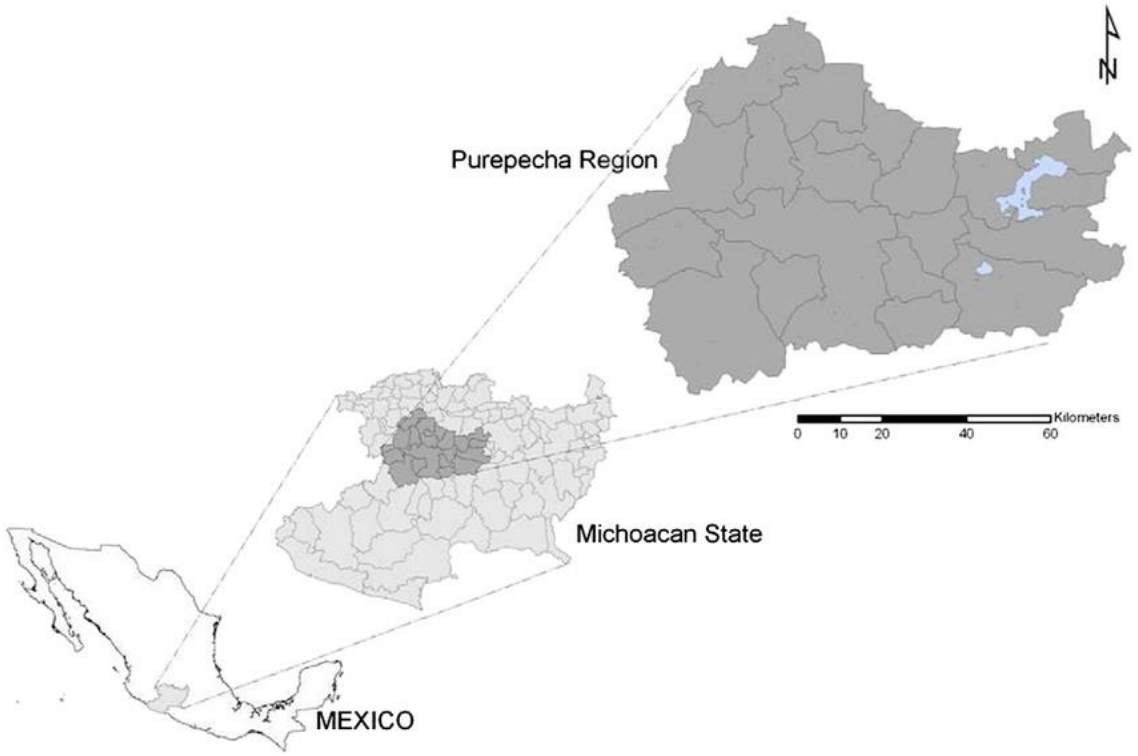


Figure S1. Purepecha Region of the Michoacan State. Source [1].

Figure S2. Prototype of simulated kitchen built at GIRA facilities in Patzcuaro, Michoacan, Mexico.

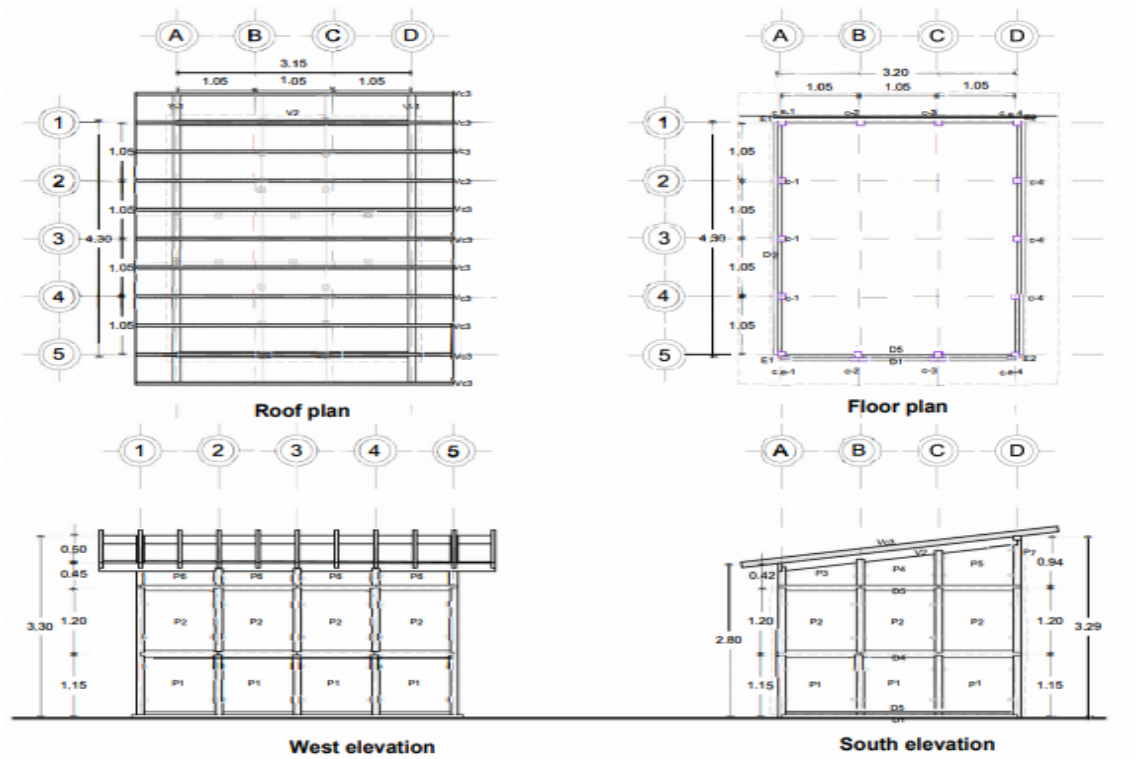
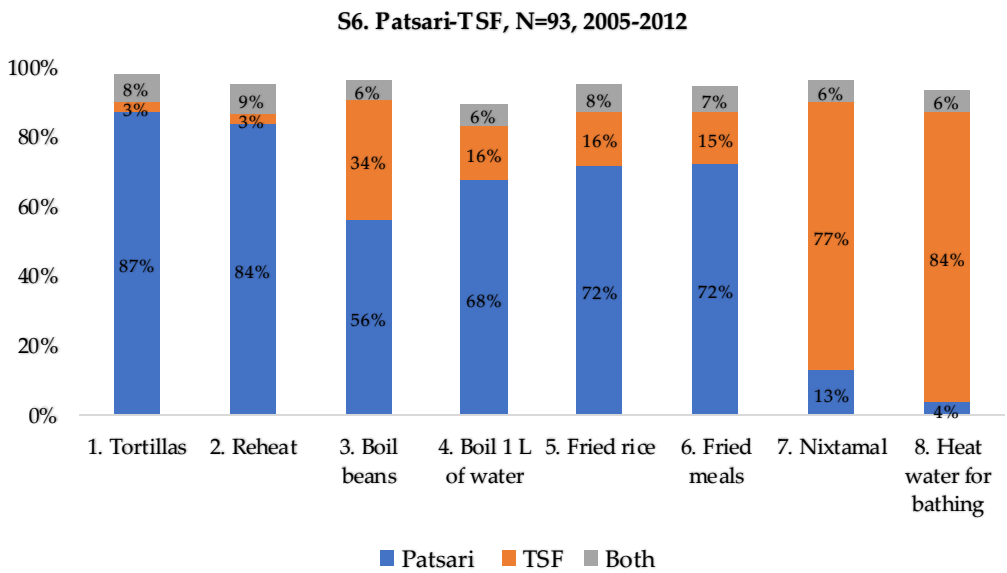
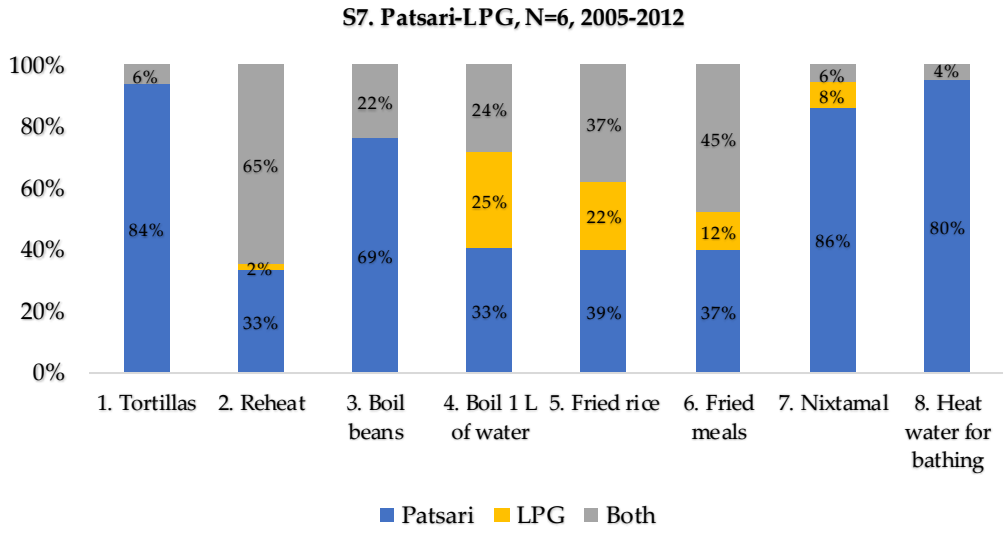


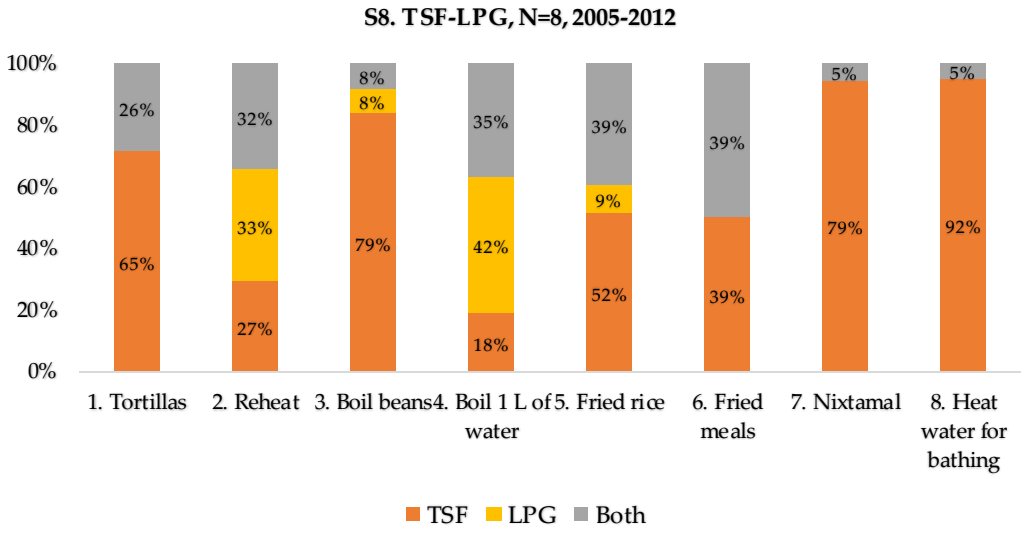
Figure S3. Architectural plans of the prototype of simulated kitchen.

Figure S4. Traditional dishes performed by CCC.

Figure S5. IAP meters installation through simulated kitchen.




S7. Patsari-LPG, N=6, 2005-2012
100%
80%
60%
40%
20%
0%
6%
84%
65%
2%
33%
22%
69%
24%
25%
33%
37%
22%
39%
45%
12%
37%
6%
8%
86%
4%
80%
1. Tortillas
2. Reheat
3. Boil beans
4. Boil 1 L of water
5. Fried rice
6. Fried meals
7. Nixtamal
8. Heat water for bathing
Patsari
LPG
Both


S8. TSF-LPG, N=8, 2005-2012
100%
80%
60%
40%
20%
0%
26%
65%
32%
33%
27%
8%
8%
79%
35%
42%
18%
39%
9%
52%
39%
39%
5%
79%
5%
92%
1. Tortillas
2. Reheat
3. Boil beans
4. Boil 1 L of water
5. Fried rice
6. Fried meals
7. Nixtamal
8. Heat water for bathing
TSF
LPG
Both

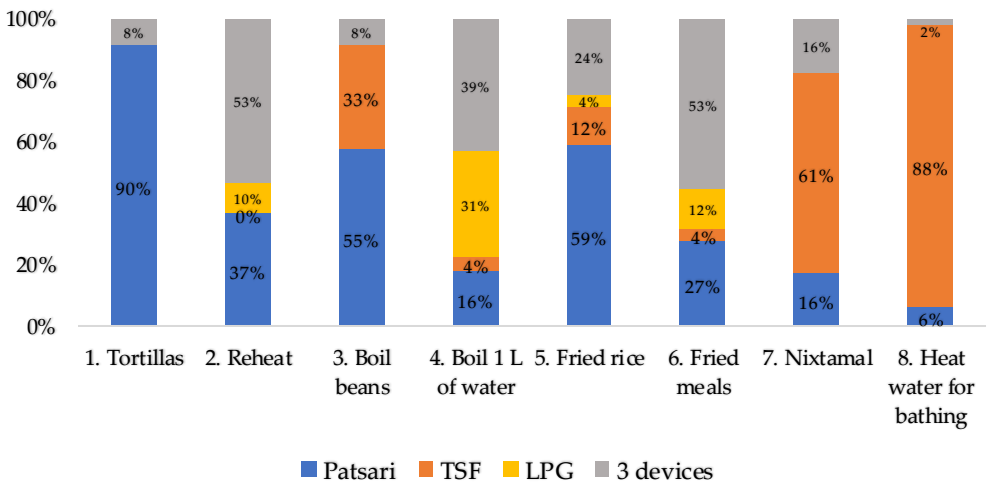

S9. Patsari-TSF-LPG, N=6, 2005-2012
100%
80%
60%
40%
20%
0%
8%
90%
53%
10%
0%
37%
8%
33%
55%
39%
31%
4%
16%
24%
4%
12%
59%
53%
12%
4%
27%
16%
61%
16%
2%
88%
6%
1. Tortillas
2. Reheat
3. Boil beans
4. Boil 1 L of water
5. Fried rice
6. Fried meals
7. Nixtamal
8. Heat water for bathing
Patsari
TSF
LPG
3 devices

Figure S6 to S9. Main Cooking Practices by Stove and Stacking Option: S6) Patsari-TSF, S7) Patsari-LPG, S8) TSF-LPG and S9) Patsari-TSF-LPG. Source: Regional Longitudinal Survey conducted for a sample of 257 rural households between 2005 and 2012.

Table S1. $PM_{2.5}$ and CO 24-h concentrations, cooking tasks and ambient air for individual task.

Task	Stove/Stacking	Particulate Matter PM2.5 (μg/m3)			Carbon Monoxide CO (mg/m3)		
		Cooking task	24-h	Ambient Air	Cooking task	24-h	Ambient Air
Reheat (tortillas and meals)	Patsari	13 ± 7	19 ± 10	19 ± 11	2.9 ± 0.3	1.2 ± 0.4	1.1 ± 0.4
	U-type	536 ± 264	32 ± 14	16 ± 11	13 ± 3	2 ± 1	0.7 ± 0.3
	LPG	17 ± 8	14 ± 5	14 ± 5	2 ± 2	0.3 ± 0.2	0.2 ± 0.2
Nixtamal and heat water for bathing	Patsari	33 ± 12	22 ± 7	18 ± 6	5 ± 2	1.5 ± 0.1	1 ± 0.1
	U-type	646 ± 87	43 ± 5	18 ± 6	13 ± 2	1.8 ± 0.1	1 ± 0.1

NOTE: variability expressed as ± standard deviation.

Table S2. Performance parameters for individual tasks.

Task	Stove/Stacking	Fuel	Fuel consumption (kg)	Energy consumption (MJ)	Cooking time (min)
Reheat (tortillas and meals)	Patsari	Fuelwood	0.4 ± 0.2	8 ± 3	18 ± 2
	U-type	Fuelwood	0.7 ± 0.3	12 ± 4	25 ± 10
	LPG	Gas	0.1 ± 0.1	4 ± 1	17 ± 2
Nixtamal and heat water for bathing	Patsari	Fuelwood	2.2 ± 0.3	38 ± 5	57 ± 8
	U-type	Fuelwood	3.5 ± 0.2	55 ± 4	54 ± 12

NOTE: variability expressed as ± standard deviation.

Reference

1. García-Frapolli, E.; Schilmann, A.; Berrueta, V.M.; Riojas-Rodríguez, H.; Edwards, R.D.; Johnson, M.; Guevara-Sanginés, A.; Armendariz, C.; Masera, O. Beyond fuelwood savings: Valuing the economic benefits of introducing improved biomass cookstoves in the Purépecha region of Mexico. *Ecol. Econ.* **2010**, *69*, 2598–2605.