

## Intensive Case Study # 2: Lidia and Doña Francisca. (Psuedonyms)

Yellow highlights added occasionally for clarification to survey.

### Meta Data

Antecedents of note (recruitment etc.)

Set up 6/12. Alejandro & Paty work closely with this family and set up survey and then the case study once we mentioned the criteria in which we were interested (see below)

Survey Case #;

### Rationale for Case Study (Generic and from the Survey):

- Earthquake and core house courtesy of FCP
- Dramatic extensions of building on lot – why; what and for whom ?
- Organization on lot of three (apparently) homes? Clarify.
- And drawn from survey notes at end – a family member that has otros capacidades
- Also some inconsistency in Lidia having a three room house but with dirt floors, wooden walls etc.

### Synthesis of Case from Survey (background and points pertinent to the case)

Again – bullets see examples cases # 1 7 2

- Lidia; age 30 lived on lot all of her life (mother on lot?)
- 3 members of household: 2 children Jesus aged 9; & Mariana aged 4 (cute chatterbox)
- Compound Nuclear household structure
- Cultivates the usual (Amarantha; maize; frijol; chia etc.
- But also have a garden nursery in which Alejandro and Fondo Monica supported (this not mentioned in survey)<sup>1</sup>
- 3 rooms but very poor quality (# 2 on our gradation 1-10) (incorrect see below)
- WC connected; regadera (shower facility)
- Uses lena but no readings (problems instrumentation first day or two (now corrected) but today's readings will be the first
- Hermano is disabled.

See other folders for Case # 2:

- Maps and Plans in preparation: lot plan and placement of buildings, corrales; sketch plans with measurements for Melannie (Veronica??); same plans with details of air quality room by room (Claire).

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<sup>1</sup> This is becoming apparent – namely that ejidatarios interpret “products that the grow” as the staples – all of which are temporal (rain fed). Backyard nurseries are discounted (for family consumption and sale of excess product), and because they are reliant upon irrigation for the dry season (4 months +/-).

- Video clips for room by room (for Melannie to identify materials etc. – Christina??)
- Photos – various sources. We should talk about how to organize, label and store.
- Copy of the survey (Qualtrics)

### **Report – by PMW**

The story and side bar conversations:.

Lidia is the daughter of the Sra that talked with. In fact (Francisca) is the matriarch. This is a good example of how when taking a single household on a compound household arrangement) one gets a very partial picture of the on-lot arrangements. (More anon.)

When we arrived Lidia had gone for an appointment (not sure why but survey shows that she has many problems of stress, anxiety etc. But she was back lunchtime and seemed fine.

Matriarch (Francisca) has several kids:

- 1) Lidia (interviewee about whom we have interview notes and who lives in the main house —the pie de casa provided by the FCP).
- 2) Marcus who is disabled (cerebro problems) but drinks heavily - alcoholic. He sleeps in the blue house/room. Ultimately he will live in casa # 2( where Francisca sleeps)
- 3) Noemi she is 2nd year of bachillerato and sleeps in one the rooms of the pie de casa house. The plan is that she will have the second floor of Lidia's house.
- 4) And then 2 absent children: \*\* & \*\* (he just lost his wife and is traveling and is working in Tlaxcala). Dona Francisca showed me where their houses would be built at the rear in the future — I'll mark on the plans. It is the house in the front (see plans)
- 5) Then her son \*\* who is constructing the red house #4.

Future use of the building to the front?

The almost completed casa # 3 (pretty) is going to be hers (Dona Francisca house). But she has no resources to complete it. These grants also came from FONDEN (see below).

The brown block house #4 is going to be for \*\* On plans and elsewhere I have referred to him as ..

The core house— also from FONDEN (check or from FCP I think). (Looks as though both Lidia and Francisca qualified. Lidia went with the core house FCP; Interesting that they have enclosed (+/\_) the patio (see photos). This is where we had lunch. Reason? They were not comfortable cooking and eating so close – he smoke and heat etc, so they enclosed (space at top for air circ, and use that space as dining area, wash plates, coffee making etc. Also a small over outside - for bread baking. Francisca with the construction of a new house.

Hortalizas. Have their own greenhouse (Francisca). Water all year round. Cistern for the greenhouse capacity for 4 months. Other cistern is for the house. If need water beyond four months then use from the regular piped water supply. Originally idea was to use rainwater but not capture... Jitomate plants, potatoes and several other plantings in between. When finished tear up the jitomates and set out to dry and then use as compost in the campo. The jitomate is indigenous and the seeds can be used directly. Hybrid versions you can't (apparently) and each seed costs 3 pesos. However few people use, most going with the purchased variety, -- part of Alejandro's promotion activities is to encourage self seeding varietal.

Health? Smoke at very dangerous levels and I could smell plastic (like tire smell). Used it when they took Lena (hot) to the “kitchen” to prepare the tortillas. “Hazardous”. Measures > 100,000 p10. Claire just measured 12:55 kitchen and p10s were >100,000 and 100 degrees temp.

### **Conclusions; The So What ? Questions; Additional Team comments; and Action Items**

- As in case # 1, a major health problem with the hazardous particulate in the kitchen (and proximate areas). Also burn plastic to light...
- Rear area has a lot of garbage (plastic etc. – see photos). Smells foul also (but may be the pig pens at rear). However, the danger more from flies and other pests & disease carriers.
- Core house can have a dynamic effect, but often unpredictable ways. The structure as planned and installed is not fully congruent with needs. However can generate / raise expectations and then get frozen when no additional (or external) resources. Maybe a micro loans program would work her? To finish-out buildings
- Hortalizas option a la Fondo Monica is obviously productive and working well. How widespread?

PMW’s comments on the Health and Hazards scenarios of Case # 2 Xochiteopan, Casa Lidia.

See notes Casa 2 for background about the familia.

Air Quality features are interesting (see Diagram).

#### **AQ: *Lidia's House*; UNHEALTHY**

Sala pm2.5=80 (U); pm10=98.4 (M); CO2=1514 (U)  
RC1 pm2.5=254 (U); pm10=391 (U); CO2=715 (M)  
RC2 pm2.5=244.5 (VU); pm10=322.5 (U); CO2=780 (M)  
Bano pm2.5=172.8 (U); pm10=225 (U); CO2=796 (M)

Sala area is where we ate (lunch) and is the area extended by Lidia and family (see plan and original photo taken in March 2018). It is open at the top which helps, but Unhealthy probably due to the cooking (smoke) that goes on at the entrance (tortillas – carbon). There is also an oven outside but not sure about how frequently used. The other cooking takes place in the kitchen see below.

But the two bedrooms and also unhealthy across the spectrum of measures. Probably best explained by the poor ventilation and quite intensive use (her 2 kids bedroom and hers. Also contamination from the sala area. The bano is also unhealthy on all counts.

Francisca's house is actually just two bedrooms (she and Noemi) and again the poor air quality is from lack of ventilation (no cooking here – it is all done in the kitchen and in Lidia's house.)

#### **AQ: *Francisca's House/Bedrooms*:**

##### **UNHEALTHY/MODERATE**

RC1/SALA pm2.5=79.6 (U); pm10=107.9 (M)  
RC2 pm2.5=80.8 (U); pm10=106.9 (M)  
Shower Rm pm2.5=16.6 (M)

Marcus sleeps and in the wooden box which has fertilizer bags stacked up at one end. His space has poor air quality – Hazardous on both pm counts. Poor ventilation but I suspect that much of the poor quality is due to the smoke from the kitchen area next door. Not clear what direct impact fertilizer sacks have upon air quality – Ideas?

AQ: **Macelino's Bedroom** (Fertilizer Storage) **HAZARDOUS**  
Pm2.5=999.9 (**H!**); pm10=999.9 (**H!**)

AQ: **Kitchen VERY UNHEALTHY/USG**  
pm2.5= 220.2 (VH); p10=183.7 (USG)

Kitchen is very unhealthy, but the fact that levels are much lower than Marcelino's room suggests that maybe fertilizers are the primary trigger. Recall that Marcus is an alcoholic and has mental health problems (see notes).

AQ: **Francisca's House** (Under construction) **MODERATELY UNHEALTHY** Sala pm2.5=15.3 (M)

Strangely both \*\* and Francisca's future dwellings (in construction) have one room that is Unhealthy. Probably due to construction dust?  
The rubble and building materials lying around could cause problems for the youngest daughter (chatterbox as I call her).

AQ: **Marcelino's House** (Under Construction) **UNHEALTHY**  
R5 pm2.5=249 (VH); pm10=318(U)

Elsewhere on the lot there are a number of major health issues, most notably the poor air quality under the extension roof of Francisca's house where there is a lot of cooking activity. Further to the back of the lot one sees a wrecked pick-up (photos) and more significantly a lot of garbage (include g thrown plastic) which attracts flies and other pests. Further back still are the pig pens (two pigs). Good separation from the residential spots but also a likely locus of flies, mosquitos (breeding grounds) etc. Better yard care and cleanup would undoubtedly help reduce health risks.

Uneven ground and entrance (to Francisca's house) would also likely to cause trips and impede mobility. Lidia is overweight and appears to be poor health (diabetes?).

Kitchen area is bare earth and combined with the dirty lot areas could be a cause of infectious diseases.

Drinking water comes from the llave. Mangeras (hoses) used to move around lot and fill the two cisterns (for the greenhouse). Although chlorinated, behaviors on lot may lead to poor water or contaminated water. (Diaharrea and/or gastroenteritis records from survey? Check?)

**Bottom line on the case:**

- As elsewhere cooking with leña and carbon and use of plastic starters generates very poor air quality. Cooking largely takes place outside the dwelling itself. Very hazardous readings probably linked to fertilizers but we need to understand why? (Ask Alejandro and Paty.)
- Poor ventilation in bedrooms is a major cause of poor air quality – an easy fix?
- Garbage and poor yard management is also a cause for concern

PMW 7/31/2019