

Triangle Taste Test

Result. Samples with 25% potassium-enrichment were indistinguishable from regular table salt, whereas samples with 33% and 50% were distinguishable.



**Salt Substitute Combination
for Intervention :**

25% KCl - 75% NaCl



**TTT participant answers the
questionnaire**

Qualitative study (1)

- In-depth interviews and focus groups, 6 villages.
- 170 focus group participants (including men and women), 18-65 y/o
- 66 in-depth interviews: 35 people with hypertension, 17 local authorities, 8 traders, and 6 health personnel.



Focus group participants

Qualitative study (2), main results

- Women are the family cooks but men's opinions about food quality and taste also influence the women's choices.
- Salt is considered a key ingredient for food flavor. Even though a high consumption of salt is considered unhealthy, there is no association between salt intake and hypertension.
- Available table salt is very cheap (USD 0.20/kg) and has very low quality (grey color). Salt substitute is not available in the area and participants in focus groups showed high interest in using it.

Qualitative study (3), other

- Low influence of health system and health workers in community members behaviors
- High recognition and credibility of community health promoters of Centro de Salud Global, our local partner in Tumbes
- Low penetration of radio and newspapers in small villages
- Community spaces and activities identified

Product Identity Research (1)

- Product (substitute):
 - Creation of substitute identity: name and colors of the product, including selection of packaging and size of the bags (1 kg)



Fieldwork activities



Substitute



Comics

Product Identity Research (2)

- Short questionnaire with 60 participants (10 per village) to build product identity
- Name: Liz
- Character: Similar to local women
- Packaging
 - Transparent plastic bags, red and orange colors, including product information. 1 Kg. weight.
 - Salt container: Plastic, screw cap, 1 Kg. capacity.



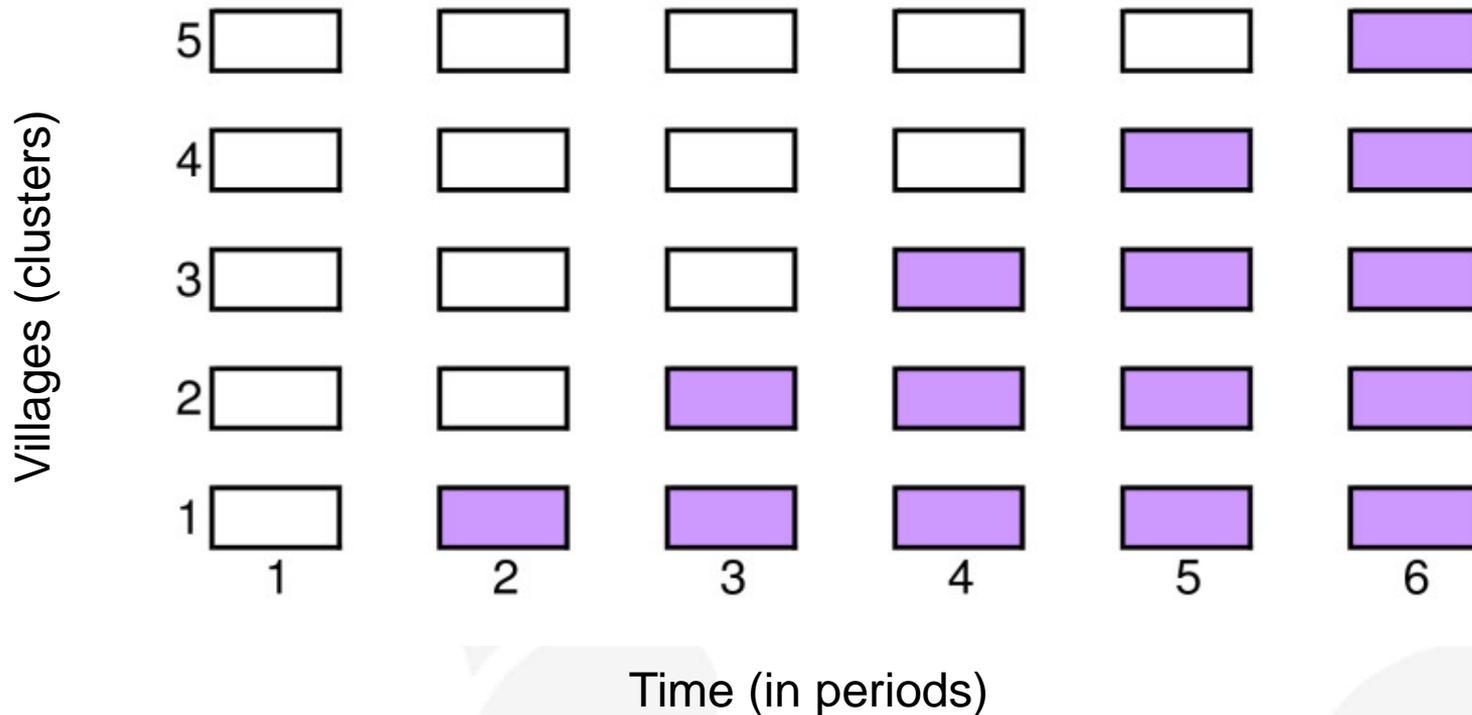
Again context!



Implementation phase



Stepped wedge trial



Recruitment and baseline

- April-July 2014 enrollment and baseline data collection in the 6 villages.
- 2365 adults of 2575 potential participants accepted to be enrolled (92%). Rejection rate was 4.9% (N=127)



- July 2014: Random selection of the 1st village for intervention
- August 2014: Implementation phase began
- March 2015: Two villages receiving the intervention

Production of salt substitute



- A small factory has been built in Tumbes to produce the salt substitute. The ingredients are “imported” from Lima

- Salt substitute with 25% KCl is not available in the market



Distribution

- Price: Free
- Market: ~ 1200 families of 6 villages, 7 restaurants, 2 bakeries and 2 local sellers.
- Exchange of all table salt for salt substitute.
- Free delivery, approximately once per month
- First delivery arrives in plastic pots



Social Marketing Campaign

- **Target groups:** Women (family cooks) & Community members.
- **Main strategies:** Liz's friends (*sellers* or promoters), door to door and edutainment (educational entertainment) to promote the consumption of Sal Liz.



Social Marketing Campaign (2)



Summary. Why all this?

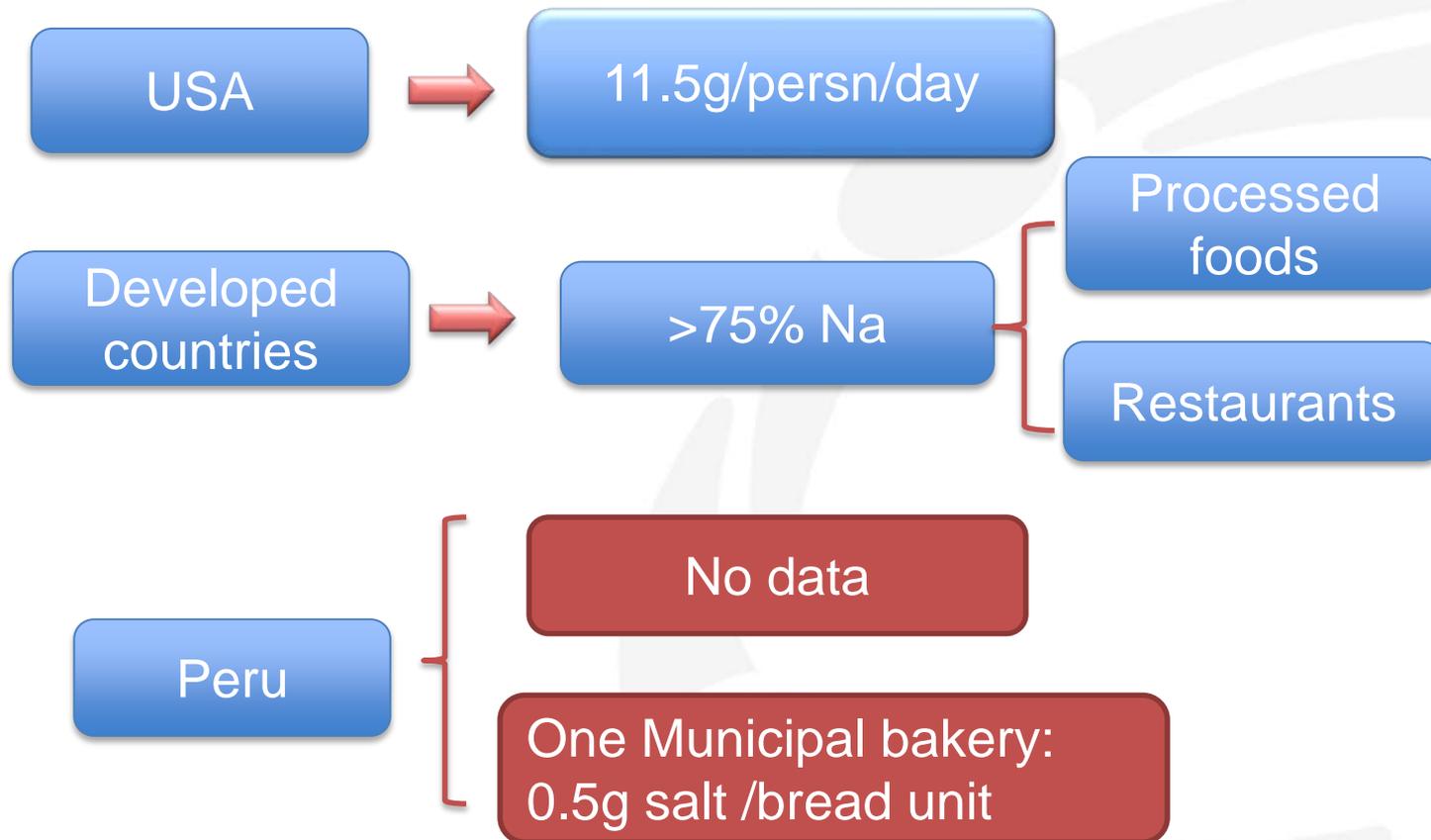
- Main outcome
 - Difference (θ) 3 mm Hg in blood pressure levels, intervention and control groups
- Population-based approach
- Ask Darwin for his slides 😊



Municipal bakery

- A few days in Peru
- After your food tour yesterday
- ...?
- Processed foods?

Are sources of sodium intake the same?



Top 10 Sodium Sources
People Aged 2-19 Years

- 1 Pizza
- 2 Breads & rolls
- 3 Poultry
- 4 Cold cuts & cured meats
- 5 Sandwiches
- 6 Savory snacks
- 7 Soups
- 8 Cheese
- 9 Mixed pasta dishes
- 10 Frankfurters & sausage

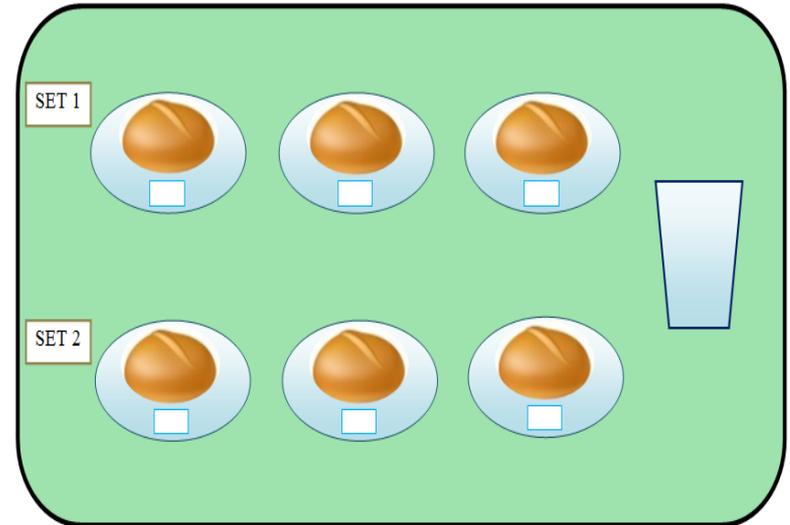


Bread makers

Do worry about...

- Texture
 - Shape
 - Crunchy-ness
 - Sales
-
- Preparation 20g salt / Kg flower
-
- What would you change?
 - Again, think about the other.

TTT bread preparation, n=70 customers



Results

- Bread prepared with 18g salt/kg flower
 - 39% (27 people) detected the odd sample
 - 56% found differences in salted flavour
 - 80% will continue buying in the bakery
- Bread prepared with 16g salt/kg flower
 - Only 27% (19 people) detected the odd sample
 - 45% found differences in salted flavour
 - 84% will continue buying in the bakery
- No difference
- Let's do it! Bread prepared 16g salt/kg flower

Intervention

Bread prepared with 20g → 16g salt / kg flower
20% reduction

3 months, Pan Francés only, one bakery

Constant:

Estacionalidad

Price

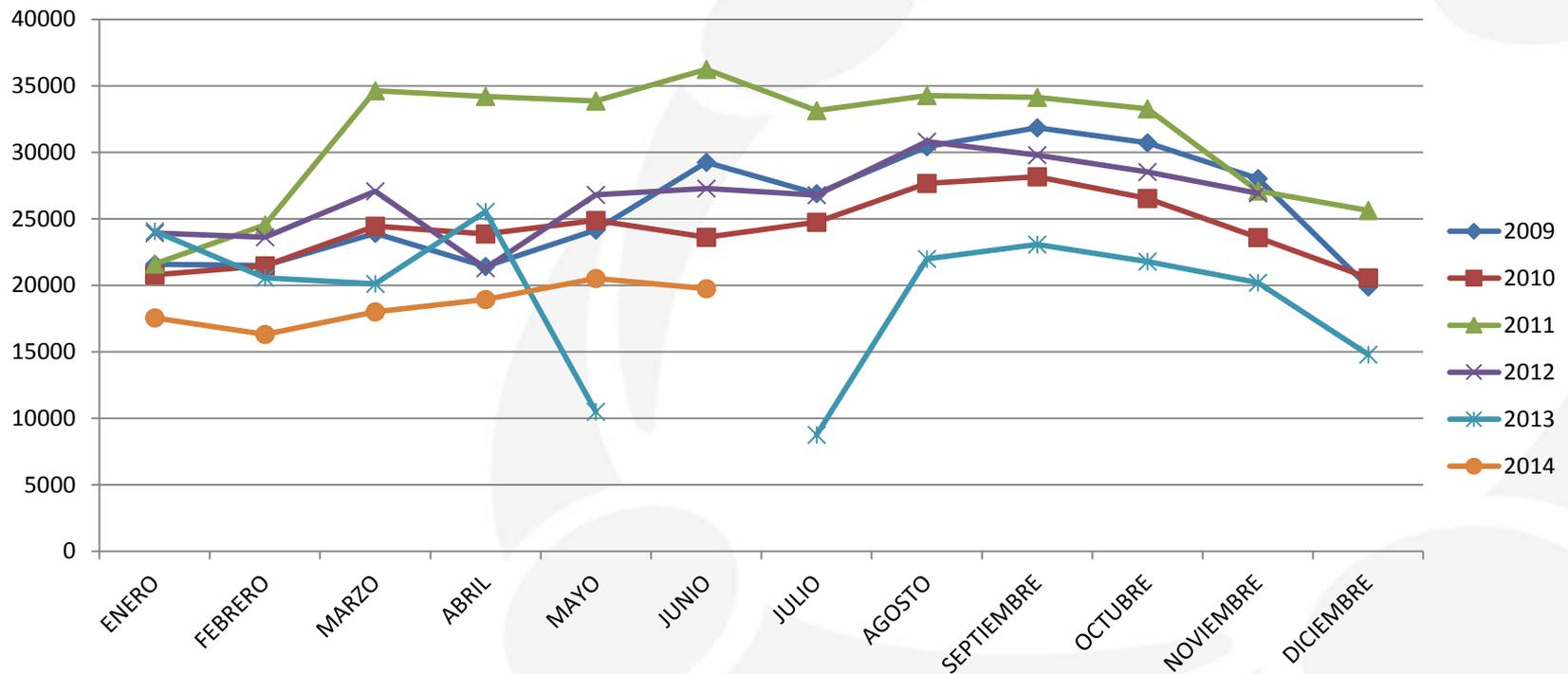
Bakers

Any other promotion



Results

- Similar annual trend observed
- no difference after introducing bread prepared with lower salt



Junio 2013: remodelación de la panadería.

Conclusions

- Feasible
- Not rejected by customers
- Sales not affected
- Sustained

- Immediate KT
- Waiting for larger battles

 **MIRAFLORES**
PORTAL OFICIAL

las  noticias

Panes más saludables

Panadería municipal Santa Cruz es pionera en el país en producir panes con 20% menos de sal, que contribuyen a una mejor calidad de vida.

Miraflores, lunes 2 de febrero de 2015

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Original Paper

Design and Multi-Country Validation of Text Messages for an mHealth Intervention for Primary Prevention of Progression to Hypertension in Latin America

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On the go... 2 by 1... 25 by 25?

- Municipal bakery
 - We succeed!
 - Now, waiting for political moment to scale
- mHealth to prevent progression from prehypertension to hypertension
 - Four domains, one of them reduce salt
 - We failed! As Researchers. Remember about dosage and fidelity
 - We succeed, in opening new areas of intervention

Closing remarks

- Be curious, do not assume we know everything
- Complex interventions required being aware ahead of time
- Challenges in development, but use those developments to do other things
- Define well ahead of time your process / uptake / fidelity indicators

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Manuscripts

- Saavedra-Garcia L, Bernabe-Ortiz A, Diez-Canseco F, Miranda JJ. *Generating information: what is the average consumption of salt and what are the sources?* Rev Peru Med Exp Salud Publica. 2014;31(1):170-1.
- Bernabe-Ortiz A, Diez-Canseco F, Gilman RH, Cárdenas MK, Sacksteder KA, Miranda JJ. *Launching a salt substitute to reduce blood pressure at the population level: a cluster randomized stepped wedge trial in Peru.* Trials. 2014;15:93.
- Saavedra-Garcia L, Bernabe-Ortiz A, Gilman RH, Diez-Canseco F, Cárdenas MK, Sacksteder KA, Miranda JJ. *Acceptability of preparations using different potassium-enriched salts using a triangle taste test.* Public Health Nutrition (submitted).

Challenges (1)

- The ethical approval process for the intervention activities was difficult, particularly because we needed to coordinate two committees:
 - As the suggestion of one of the IRBs, we decided to split our original proposal into two smaller projects
- Difficulty in the implementation of a huge intervention:
 - To find an appropriate way to accomplish our objectives: we can guarantee substitute delivery but not consumption
 - Salt logistics: buying, mixing, packaging, delivery strategies, inventory, storage, appropriate personnel

Challenges (2)

- Marketing campaign: two “different languages” (research and communication) trying to build a common product:
 - Multiple meetings (weekly) with the marketing team to create an appropriate campaign
 - In some cases, we lacked evidence to support proposed strategies: needed validation and a pilot of the marketing strategy
 - The campaign has been built in the best way possible, but there is a plan B in case of failure

Aim 1: Marketing campaign

Logistic Team



Substitute creation (mixed)

Deliver substitute to families



Enable delivery points

Communication and Education Team

Support food preparation (home visits, recipe delivery, incentives, etc.)

Family groups (briefings, food preparation, incentives, etc.)

Village and community level (product release: fairs, substitute tasting, etc.)



Intervention at three levels