


Maize Harvest and Post-harvest Practices

Barrier Analysis


Presented by: Mercy Corps Guatemala
Financed by: TOPS/USAID

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BACKGROUND

- Chronic malnutrition is an enormous problem and challenge to the country's development.
- 49.8% of children under five are stunted in Guatemala (highest in Latin America and sixth worldwide).
- Stunting rates are highest in rural areas and indigenous population.


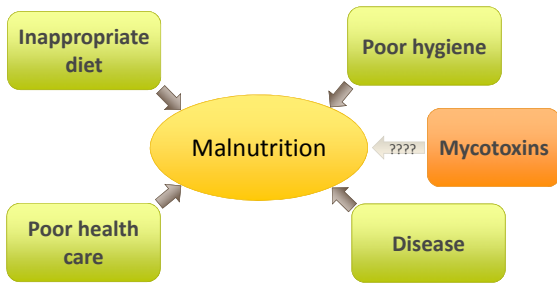


MCG growth control: Fernando Prera




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graph TD
    A[Inappropriate diet] --> C((Malnutrition))
    B[Poor hygiene] --> C
    D[Mycotoxins] --> C
    E[Disease] --> C
    F[Poor health care] --> C
  
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MYCOTOXINS



- Aflatoxins and fumonisins are predominant in Guatemala.
- Maize crops are most affected.
- Inappropriate harvest and post-harvest practices increase the presence of mycotoxins.



MCG Maize for seed: Clara Ramirez




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BARRIER ANALYSIS

A special kind of survey that focuses on identifying:

- What prevents adoption of a new behavior (BARRIERS)
- What helps or makes it easier to adopt a new behavior (ENABLERS)



MCG BA field work: Interviewing staff



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TERMINOLOGY:



- Behavior
- Doers / Non-doers
- Priority Group
- Influence Group
- Determinants for Behavior Change
- Bridges to Activities
- Activities
- Framework for Designing of Behavior Change



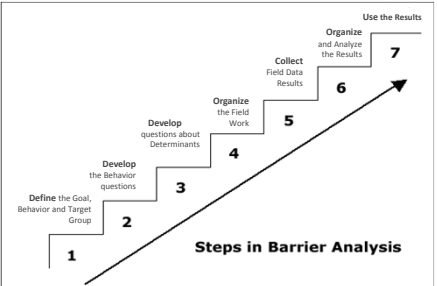
MCG BA field work: Estuardo Aguilar




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BARRIER ANALYSIS STEPS



http://barrieranalysis.fh.org/what_is/what_is_barrier_analysis.htm

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IDEAL BEHAVIORS IDENTIFIED

1. Corn producers bend cornstalks within 1 to 3 weeks prior to harvest.
2. Corn producers sun-dry their grain at least 3 days before storing.
3. Corn producers store grain in silos before consuming it.
4. Women in corn producing families nixtamalize their corn by boiling it in water and lime (calcium carbonate) and then rinsing it at least 3 times with clean water.




MCG Alta Verapaz: Estuardo Aguilar



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DATA COLLECTION


- 2 teams of 4 interviewers and 1 supervisor
- 13 days
- 27 communities
- 8 municipalities in Alta Verapaz and 1 municipality in Izabal
- 386 people interviewed, all of Q'eqchi' origin:
 - 272 men, 113 women, 1 not registered
 - Age range: 17-80; Average: 44 years old



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VALID INTERVIEWS


Behavior	Total interviews	Doers	Non-doers
Bending cornstalks	96	45	51
Drying grains	96	46	50
Storage of dry grains	97	39	58
Nixtamalization	96	48	48

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DETERMINANTS

1. Perceived self-efficacy/ skills (facilitators and barriers)
2. Perceived positive consequences
3. Perceived negative consequences
4. Perceived social norms
5. Perceived access
6. Reminders or cues for action
7. Perceived susceptibility or risk
8. Perceived severity
9. Perceived action efficacy
10. Perceived divine will
11. Policies
12. Culture

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ACTIVITIES

- Bridges to Activities Workshop
 - Mercy Corps staff
- Activities Workshop
 - Ministry of Agriculture
 - Secretariat of Food Security and Nutrition
 - NGOs
 - MC staff



MCG Inter-institutional cooperation: Fernando Prera

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FINDINGS



MCG Corn field and church, Fernando Prieta

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Behavior 1: Corn producers bend cornstalks within 1 to 3 weeks prior to harvest



MCG BA field work: Interviewing staff

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BEHAVIOR 1: DETERMINANTS

Perceived self-efficacy/skills



- 100% of doers vs. 60% non-doers say that they can do the promoted practice.

Perceived self-efficacy (barriers)

- 14% of doers and 33% of non-doers consider lack of knowledge to be a barrier to practice the behavior.

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BEHAVIOR 1: DETERMINANTS



Perceived positive consequences

- Better quality of grain (32% doers – 15% non-doers)
- Grain rots less (43% doers – 23% non-doers)
- Birds don't eat the grain (52% doers – 27% non-doers)

Perceived negative consequences

- 48% of doers and 19% of non-doers reported that there are no negative consequences


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BEHAVIOR 1: DETERMINANTS

Perceived social norms

- 36% of doers and 13% of non-doers perceive that the majority of people they know approve the behavior. Influence groups perceived *to approve the behavior* are:
 - Nuclear and extended family
 - People that have knowledge of the practice
- Elders are the influence group that are perceived *to disapprove the behavior*.

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BEHAVIOR 1: DETERMINANTS


Perceived action efficacy

- 70% of doers vs. 21% of non-doers consider that bending the cornstalk prevents the grain from becoming moldy.

Perceived divine will

- 30% of doers and 46% of non-doers perceive, through comments and advice from their religious leaders, that God does not agree with the bending of cornstalks one to three weeks prior to harvest.

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Behavior 2: Corn producers sun-dry their grain for at least 3 days



MCG sundry practice: Olga Lorenzana



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BEHAVIOR 2: DETERMINANTS.

Perceived self-efficacy /skills



- 98% doers stated that they are capable of doing the practice vs. 26% of the non-doers.

Perceived self-efficacy (facilitators and barriers)

- Having the time to do the practice is a facilitator (doers 37%); lack of time is a barrier (non-doers 54%).
- 67% of doers and 32% of non-doers consider having the necessary supplies.
- 28% of doers and 10% of non-doers perceive the bad weather (rain) to be an obstacle.



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BEHAVIOR 2: DETERMINANTS

Perceived positive consequences


- 50% of doers and 24% of non-doers identified that the grain remains healthy when sun-dried.

Perceived negative consequences



- 76% of doers and 78% of non-doers perceive that the grain lose weight when sun dried.



MCG sundried maize: Fernando Prera




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BEHAVIOR 2: DETERMINANTS

Perceived social norms

- 61% of doers vs. 18% of non-doers perceive that the majority of people they know approve the behavior.
- 87% of doers perceive that nuclear family approves the practice, whereas 36% of non-doers perceive that the nuclear family does not approve of it.
- 33% of doers and 12% of non-doers perceive the neighbors to be a group that disapproves the practice.


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BEHAVIOR 2: DETERMINANTS



Perceived access

- 33% of doers and 74% of non-doers reported it is difficult to get the required materials
- 54% of doers and 22% of non-doers said that it is not difficult to get what is required



MCG sun-drying maize: Olga Lorenzana

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BEHAVIOR 2: DETERMINANTS

Reminders/Cues for action

- 35% of doers and 52% of non-doers indicated that it is very difficult to recall when and how to do the practice

Perceived divine will

- 39% of doers and 74% of non-doers perceived, through comments and advice from their religious leaders, that God does not agree with the practice. They considered that the maize suffers when sun-dried and that God does not want that.

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Behavior 3: Corn producers store their maize in silos before consuming it




MCG opening a silo. Fernando Prieta





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Grain Humidity Test - Home based method



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BEHAVIOR 3: DETERMINANTS

Perceived self-efficacy (skills)

- 100% doers and 62% non-doers stated they are capable of doing the practice with current knowledge and skills.

Perceived self-efficacy (facilitators and barriers)

- 23% of doers and 9% of non-doers stated that having the support of the family for different stages of the process is a significant facilitator.
- 2 barriers were significant: lack of knowledge (19% non-doers, 0% doers) and having small quantities of maize (16% non-doers, 0% doers).



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BEHAVIOR 3: DETERMINANTS

Perceived negative consequences


- 38% of doers and 10% of non doers consider that there are no negative consequences when doing the practice.

Policies

- 82% doers and 97% non-doers stated that they don't know of any policies that support the practice.



MCG MAGA silo - Clara Ramirez



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Silo Storage



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Behavior 4: Women in corn producing families nixtamalize their corn by boiling it in water and lime then washing it at least three times with clean water



MC library: Girl Preparing Maize 1_Miguel Samper.JPG




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BEHAVIOR 4: DETERMINANTS

Perceived negative consequences



- The identified negative consequence refers to the incorrect implementation of the practice. 4% of doers and 25% of non-doers mentioned that leaving residues of lime in the grains causes diseases in the family.



MCG Nixtamalization: Field work staff




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BEHAVIOR 4: DETERMINANTS

Perceived access

- 50% of doers and 31% of non-doers said it is “not difficult” to obtain the required materials to practice the behavior. The key resource most difficult to obtain is clean water.



MCG women collecting water: Fernando Priera



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BRIDGES TO ACTIVITIES AND ACTIVITIES



MCG Health Commission: Fernando Priera





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Behavior 1: Corn producers bend cornstalks within 1 to 3 weeks prior to harvest


Determinant	Bridge to Activity	Activity
Perceived self-efficacy	Strengthen the perception that the producers can bend the cornstalks with their current resources and skills.	Implement demonstration plots showing how to bend cornstalks.
		Use existing structures and/or methodologies to exchange experiences between doers and non-doers. Consider an exchange between different communities or municipalities. Use local media to disseminate key messages.

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RECOMMENDATIONS



MCG corn field: Clara Ramirez




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RECOMMENDATIONS

Include Influence Groups when planning interventions



MCG maize farmer: Fernando Prera



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RECOMMENDATIONS

Integrate all four behaviors in designing the DBC framework



MCG maize farmer's wife: Fernando Prera



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MCG Maize field: Fernando Prera



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