

# Behaviour-grounded, incentive-based, training for pork butchers in traditional markets in Africa and Asia

Delia Grace

Natural Resource Institute, University of Greenwich, Kent ME4 4TB, United Kingdom

Email: [d.randolph@cgiar.org](mailto:d.randolph@cgiar.org)

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**Background:** Foodborne disease imposes a health burden comparable to that of malaria, HIV-AIDs or tuberculosis and costs low- and middle-income countries (LMICs) more than USD100 billion per year. Nearly all of the health burden comes from fresh foods purchased in the traditional or informal food markets in LMICs. The most risky products are fresh vegetables and animal source food, including pork. In many LMICs, meat is mainly sold in open, public markets. In others, most is sold in small butcher shops which may also sell cooked meat.

While many pilots have attempted to improve food safety in LMICs often with short term success, we don't yet have approaches proven to sustainably and scalably improve food safety. The conventional approach of relying on inspection and a national food control system fails, because of lack of resources and poor governance. Infrastructure provision is expensive and prone to degradation in the absence of maintenance.

Hence interest has grown in improving food safety through harnessing consumer demand and providing direct, immediate, meaningful incentives (material, social or moral) for behaviour change. Nudges are a subset of incentives that seek to change behaviours by altering the external context rather than through coercion or material incentives. This poster describes the use of behavioural science, incentives, and nudges in developing a training course for butchers in east Africa.

**Materials and Methods:** The International Livestock Research Institution and partners conducted or commissioned systematic reviews on food safety training, food safety interventions, nudges and piloted nudge-based studies in pork value chains in Uganda and Vietnam. Direct observation, focus group discussion, key informant interview, formative research and stakeholder workshops were held in eastern Africa.

**Results:** We developed a modular training course for butchers based on nine essential hygienic behaviours for butchers "The Five Cleans and the Three S's" (Table 1) and three sets of motivations: material, social and moral (Table 2). We identified nudges that could be incorporated into protocols to encourage behaviour change (table 1).

Table 1: Nine essential hygienic behaviours for butchers

Behaviour	Behaviour sub-components
Clean water	Obtaining clean water, keeping water clean, water filtration, chemical disinfection of water
Clean hands	How to wash hands; when to wash hands; handwashing station; use of tippy tap; construction & use of soapy bottle; hand sanitiser
Clean cloths & clothes	Different coloured cloths for different uses; many cloths; cleaning & disinfecting cloths in coloured buckets; drying cloths. Clean clothes and uniforms.
Clean surfaces	Difference between cleaning & disinfection; making up disinfectants; sprays; use of kinnos

Clean utensils & tools	
Store safely	Store food off the ground; keep food in the shade; control pests
Separate	Keep damaged away from intact, hot from cold, clean from dirty, new from old
Sanitise	Treating meat with vinegar, lemon/lime juice, foodgrade lye, citric acid, lactic acid

Table 2: Incentives for butcher behaviour change

Material	Better business: more profitable business through a) tips for keeping clients happy through polite, attentive behaviour, and good appearance; b) feedback on client satisfaction; c) training on record-keeping; d) involvement in campaigns to inform consumers on food safety; e) scores on doors to attract consumers; f) marketing strategies
Social	Societal respect & pressure: a) uniform or tee shirt; b) certificates to show they are trained; c) training in food safety outreach to consumers; d) media or market attention; e) messaging on how they safeguard health of the community; f) recognise butchers who are performing well.
Moral	Emotional and personal: a) Eliciting disgust at dirt; b) pride in professionalism and cleanliness; d) belief they are keeping butcher's family safe

Table 3: Nudges to support hygienic behaviours

Changing salience	Different coloured boards and cloths for different uses
Anchoring effects	Agreement on the behaviours that all butchers should and do manifest
Channelling vanity	Mirror over handwashing station to attract
Eliciting intentions	Reflection time at end of every training when trainees think how they will put into practice what they have learned
Making accountable	Including report back on behavioural change and anonymous spot checks on behaviour
Observing	Eyes above handwashing station
Pre-commitment	Public pledges to follow hygiene rules
Reducing friction	Dedicated tools and layout that forces localisation such as fixed hooks for cloths
Reminding	Posters on hygiene protocols e.g., how to wash hands, how to disinfect
Simplifying	Keep essential behaviours to a minimum and break hygiene behaviours into sub-routines
Warning	Explaining the harms of unhygienic food

This modular training course will be tested through two randomised controls in vegetable sellers and butchers in Ethiopia.

**Conclusion:** Training butchers in informal and traditional markets of LMICs has often relied on providing information or training in skills. Focusing on behaviours to be changed, motivating behaviour change through incentives, and facilitating behaviour change with nudges promises to be more effective and sustainable.