



Tropentag 2011  
University of Bonn, October 5 - 7, 2011  
Conference on International Research on Food Security, Natural  
Resource Management and Rural Development

---

**SWOT analysis of smallholder livestock production in Colombia and Nicaragua from a meat consumers' perspective**

Stefan Burkart<sup>a,b</sup>, Federico Holmann<sup>b</sup>, Michael Peters<sup>b</sup>, and Volker Hoffmann<sup>a</sup>

a University of Hohenheim, Agricultural Communication and Extension (430a), Schloss, Museumsflügel, 70599 Stuttgart, Germany. Email: sburkart@uni-hohenheim.de.

b International Center for Tropical Agriculture (CIAT), Tropical Forages Program, Km 17, Recta Cali-Palmira, Colombia. Email: m.peters-ciat@cgiar.org

**Abstract**

Global population growth, rising urbanization, and income growth in developing countries lead to changes in peoples diets resulting in a rapidly increasing demand for meat. A higher demand on the one hand leads to opportunities for the livestock sector but on the other hand also puts stress on it. Environmental and public health issues force producers to adapt adequate production technologies and to guarantee a high product quality. This is an enormous challenge for smallholder livestock producers which are often lacking sufficient resources or knowledge and might limit their production capacity or market opportunities. In 2010, a semi-quantitative consumer study was conducted in Colombia and Nicaragua detecting consumer meat preferences, the state of knowledge about e.g., quality standards, and the attitude of the consumers towards smallholder livestock producers. Strengths, weaknesses, opportunities, and threats existing for smallholder livestock producers were identified. Results show that in both countries, meat price still is of major importance for consumers – meat quality is less considered but growing in importance. Thus, consumers mainly choose their meat supplier regarding meat price. Nevertheless, fear of diseases transmitted via meat consumption is prevalent. The level of knowledge about meat origin is low in both countries. Concerning the fulfillment of quality standards by distributors, consumers seem to be better informed – but results show that in many cases their information is wrong. Strengths and opportunities of smallholder production are e.g., cheaper product prices, the image of utilizing natural feeds, or higher connectivity with the consumer. Weaknesses and threats are e.g., low product quality, lack of transparency, insufficient formal quality control, or limited access to credit and training. Assisting smallholder producers to focus on the strengths and opportunities and to reduce the weaknesses and threats could help to satisfy consumer preferences (e.g., growing importance of quality) and respond to new market opportunities.

**Introduction**

Global population growth, rising urbanization, and increasing incomes in developing countries lead to changes in people's diets resulting in a rapidly rising demand for meat (DELGADO et al., 1999). From 2000 to 2007 meat consumption in Colombia grew by 24%, and in Nicaragua by 62% (FAO, 2010). Sector dynamism results in a strong push to innovate and thus might lead to opportunities but also to risks for its stakeholders. Environmental and public health issues force

producers to adapt adequate production technologies and guarantee high product quality (SDC, 2007). Improving this situation is a great challenge for smallholder livestock producers, which are often lacking sufficient resources or knowledge (FLORES, 2007; JANSEN and TORERO, 2006; ARIAS et al., 2006), and might limit their production capacity or market opportunities. Additionally, meat consumers might be exposed to health risks resulting in fear and neglecting products from smallholder producers.

## Material and Methods

The main objective of this study was to identify strengths (S), weaknesses (W), opportunities (O), and threats (T) of smallholder livestock production in Colombia and Nicaragua from the perspective of a meat consumer. In order to achieve representative results, socio-economic data was obtained using a questionnaire for meat consumers in Colombia (Popayán region, Cauca: March/April 2010) and Nicaragua (Chinandega region, Chinandega: June/July 2010) including quantitative and open-ended questions. A total of 450 meat consumers were interviewed; 238 in Colombia and 212 in Nicaragua.

The financial support of the German Federal Ministry for Economic Cooperation and Development (BMZ) made this research possible and is gratefully acknowledged.

## Results and Discussion

Of the 450 consumers interviewed, 247 live in urban areas and come directly from Popayán or Chinandega (54,89%), whereas 203 are from rural areas around these cities (45,11%). The average age of the interviewees is 38,6 years in Colombia, respectively 35,6 years in Nicaragua. Concerning the gender distribution, 40,22% of the meat consumers are male, respectively 59,78% female. The average household size of the interviewees is 4,45 persons in Colombia, and 4,86 persons in Nicaragua. Based on a comparison with national statistics we accept the sample as representative.

The decisions about which meat type is to be bought and consumed by the household members, as well as the meat purchase itself, tend to be rather tasks for female household members (\*\*0,01, 2-sided). Meat consumers in Colombia prefer beef and also spend most of their meat expenses on beef. Nevertheless, chicken is the meat type which is consumed the most. In Nicaragua, meat consumers prefer chicken, spend most of their meat expenses on chicken, and chicken also is the most consumed meat type (Table 1). Beef is significantly more often preferred by rural and by male consumers (\*\*0,01, 2-sided), chicken more often by female meat buyers (\*\*0,01, 2-sided). Poorer households rank chicken higher and pork/beef lower than richer households and vice versa (\*\*0,01, 2-sided).

Preference	Colombia		Nicaragua		
	Expenses	Amount	Preference	Expenses	Amount
1. Beef	1. Beef	1. Chicken	1. Chicken	1. Chicken	1. Chicken
2. Chicken	2. Chicken	2. Beef	2. Beef	2. Beef	2. Beef
3. Pork					
4. Fish					

**Table 1: Meat preferences and consumption in Colombia and Nicaragua**

Chicken is mainly preferred because of its relatively low price (Colombia: 24%, Nicaragua: 45%), beef due to its taste (Colombia: 40%, Nicaragua: 48%), fish because of its high nutritive value (Colombia: 28%, Nicaragua: 63%), and pork due to its taste (Colombia: 73%, Nicaragua: 57%). On account of the relatively low consumption of pork in both countries, meat consumers who do not purchase pork were asked for the reasons. In both countries, these are mainly quality

reasons (e.g., the fear of diseases, low meat quality, or high fat content; Colombia: 71%, Nicaragua: 88%). Moreover, the interviewees were asked about important attributes of pork and chicken to be purchased. Concerning both meat types, meat price is of greater importance to Nicaraguan consumers, whereas quality attributes are more important for Colombian consumers (\*\*0,01, 2-sided). Meat price is also more important for larger households, for female meat buyers, and for meat consumers who prefer chicken (\*\*0,01, 2-sided). Meat quality attributes are more important for richer households (\*\*0,01, 2-sided).

Concerning prices, chicken is cheapest for the interviewed meat consumers (Colombia: 3,30 US\$/kg, Nicaragua: 2,12 US\$/kg), followed by beef (Colombia: 5,10 US\$/kg, Nicaragua: 3,34 US\$/kg), and pork (Colombia: 5,52 US\$/kg, Nicaragua: 3,84 US\$/kg). Meat prices are significantly lower in rural areas than in cities (\*\*0,01, 2-sided). Larger households have lower personal meat expenses than smaller households (\*\*0,01, 2-sided). Colombian meat consumers rather select their meat distributor because of offered quality or hygiene of the shop, whereas Nicaraguan meat consumers mainly prefer distributors offering economic prices (\*\*0,01, 2-sided).

This basic information leads to the assumption, that there are two different segments of meat consumers: price-oriented and quality-oriented meat consumers. The share of price-oriented meat consumers is still higher than the share of quality-oriented meat consumers but with an increasing household income switching seems to be common. Table 2 shows the most important characteristics of both consumer segments.

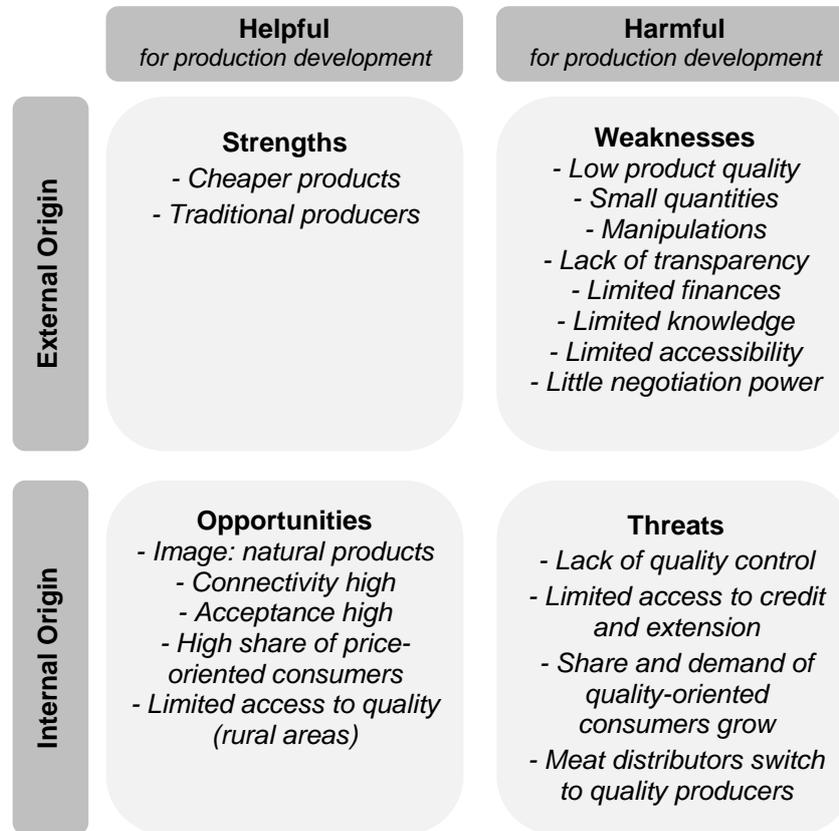
Price-oriented meat consumers	Quality-oriented meat consumers
Share higher in Nicaragua	Share higher in Colombia
Rather live in poor, large, and rural households	Rather live in rich, small, and urban households
Worried about: price increase > access to cheap meat > low quality	Worried about: low quality > access to quality > price increase
Frustrations: high price of beef/pork, increasing prices, experiences with low quality	Frustrations: experiences with low quality, no control, manipulations
Obstacle: quality market /prices increase and household incomes are low	Obstacle: good quality has its price and quality is not always available
Strategy: search for cheap distributors and cheap meat by hoping of still buying adequate quality	Strategy: increased search of quality distributors and meat with increasing household income
Measure of success: meat price > meat quality	Measure of success: meat quality > meat price

**Table 2: Differences between the two meat consumer segments**

For price-oriented meat consumers, information about meat prices/discounts, and accessibility (where to buy) is of major importance. This information mainly comes from friends and family members of the interviewees. Friends and family members have more influence on Nicaraguan households (\*\*0,01, 2-sided), poor households (\*\*0,01, 2-sided), large households (\*0,05, 2-sided), and households in rural areas (\*\*0,01, 2-sided) – groups which rather represent price-oriented consumers. The high share of friends and family members as information channels leads to the assumption that meat consumers mainly trust people they know. For quality-oriented meat consumers, information about meat attributes, risks in meat consumption, and quality standards is of major importance. This information mainly comes from the media, meat distributors, and regulatory/certification authorities. These information sources have more influence on Colombian households (\*\*0,01, 2-sided), rich households (\*\*0,01, 2-sided), small households (\*\*0,01, 2-sided), and households in urban areas (\*\*0,01, 2-sided) – groups which rather represent quality-oriented consumers. Trust in media seems to be high, as consumers more often believe in compliance with quality standards by the distributors if they have been informed by the media

(\*0,05, 2-sided). Trust in regulatory/certification authorities seems to be low resulting mainly from missing quality controls and manipulations in the meat sector.

The meat consumers were also asked for their opinion regarding smallholder livestock production. This way, the strengths, weaknesses, opportunities, and threats of smallholder livestock production could be detected and are presented in Figure 1.



**Figure 1: SWOT of smallholder livestock production from the perspective of a meat consumer**

### **Conclusions and Outlook**

Smallholder livestock producers are able to produce meat cheaply due to the following reasons: missing quality control (saves fees), the use of household waste for animal feeding, clandestine slaughtering (saves fees), and lower transport costs. In the current situation, the economic price in combination with the high share of price-oriented meat consumers, are surely the main reasons why many meat distributors (especially in rural areas) still rely on animals offered by smallholder producers. Nevertheless, the study shows that consumers switch to higher quality with an increasing household income. The strength of offering cheap products by neglecting quality issues could therefore change into a weakness of smallholder livestock production in the future. Consequently, traditionalism of smallholder livestock production could be the only remaining strength. Opportunities for the smallholder livestock production could be its image of offering more natural products. This image could be used for marketing, but at the same time meat quality has to be increased e.g., by replacing household waste and feed concentrates with natural feed (such as forages). Also production should be certified. Generally, smallholder livestock producers seem to be well-connected in their villages and therefore enjoy a high level of acceptance by meat consumers. Nevertheless, this acceptance might reduce or vanish in the future, if the high share of price-oriented meat consumers changes the consumption behavior towards high quality meat and if, especially in rural areas, the accessibility to high quality meat improves. The low quality of animals produced by many smallholders in combination with manipulations and missing

transparency is seen as their major weakness. A lack of quality control and adequate information on standards or laws by the government further exacerbate the situation, resulting in limited market access. Currently, smallholder livestock producers are not attractive to high quality meat distributors and thus, are not considered future business partners. Furthermore, the small quantities of animals produced by each smallholder do not permit economies of scale. This could increase production prices to a high level considering future quality production (quality control, adequate slaughtering) and make smallholders more expensive than medium or large producers. Additionally, the offer of small quantities reduces negotiation power leading to lower sales prices and margins. Smallholder producers' challenges include limited access to training and extension resulting in knowledge gaps concerning many basic skills necessary for sector improvements (e.g., animal management, quality awareness, book-keeping, marketing, credit obtainment, or the understanding of standards and laws). Lacking finances of smallholder producers together with limited access to (micro-)credit and the offer of (micro-)credits which are not suitable to smallholder production (e.g., inadequate repayment schedules), put additional pressure on the sector and frustrate further growth and development.

To improve the situation of smallholder livestock production and to respond to changing consumer preferences, chain collaboration is necessary. GOs, authorities, NGOs, financial institutions, and the private sector have to cooperate and develop adequate measures to assist smallholder livestock producers in the most important issues for development: (micro-)credit obtainment, availability of adequate extension and training, infrastructure development, creation of quality awareness, and the establishment of producer cooperatives. Public-Private-Partnerships could be of great importance.

## References

- ARIAS L., A.F.; TAMARA M., L.V.; CAMACHO V., C.; IREGUI, N.B.; REYES DEL TORO, C. 2006: Agroindustria y Competitividad. Estructura y Dinámica en Colombia 1992-2005. Observatorio Agrociudades Colombia. Ministerio de Agricultura y Desarrollo Rural. Bogota. 519p.
- DELGADO, C.; ROSEGRANT, M.; STEINFELD, H.; EHUI, S.; COURBOIS, C. 1999: Livestock to 2020: the next food revolution. Food, Agriculture and the Environment Discussion Paper No. 28. Washington, DC, International Food Policy Research Institute (IFPRI), Rome. 72p.
- FLORES, S. 2007: Informe cadena de cerdo de patio en Nicaragua. In: Desafíos para mejorar el acceso de pequeños productores al mercado. OXFAM, London. 30p.
- FOOD AND AGRICULTURAL ORGANIZATION OF THE UNITED NATIONS (FAO) 2010: FAOSTAT. Food Supply, Livestock and Fish Primary Equivalent, Food Supply Quantity, Colombia/Nicaragua. <http://faostat.fao.org>
- JANSEN, H.G.P.; TORERO, M. 2006: Resumen de la Literatura de Cadenas de Valor Agropecuarias en Cinco Países Centroamericanos. IFPRI. 130p.
- SWISS AGENCY FOR DEVELOPMENT AND COOPERATION (SDC) 2007: The Livestock Revolution: An Opportunity for Small Farmers? InfoResources Focus 1/07. Zollikofen, Switzerland. 16p.