

ICDD Annual Thematic Conference
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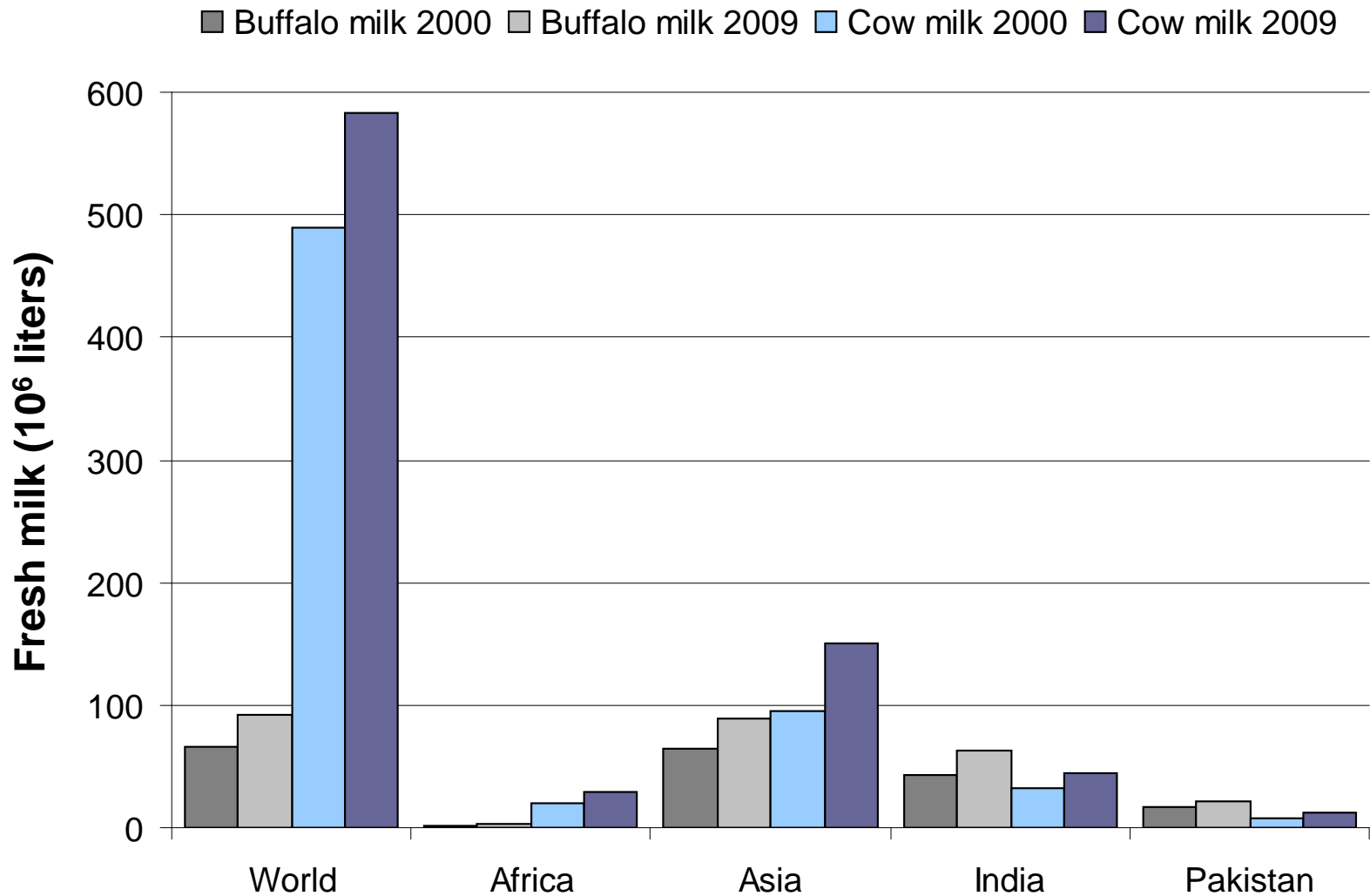
The urban dairy value chain: a promoter of development and decent jobs in Asia and Africa

Eva Schlecht & Muhammad Younas

University of Kassel and University of Göttingen, Germany

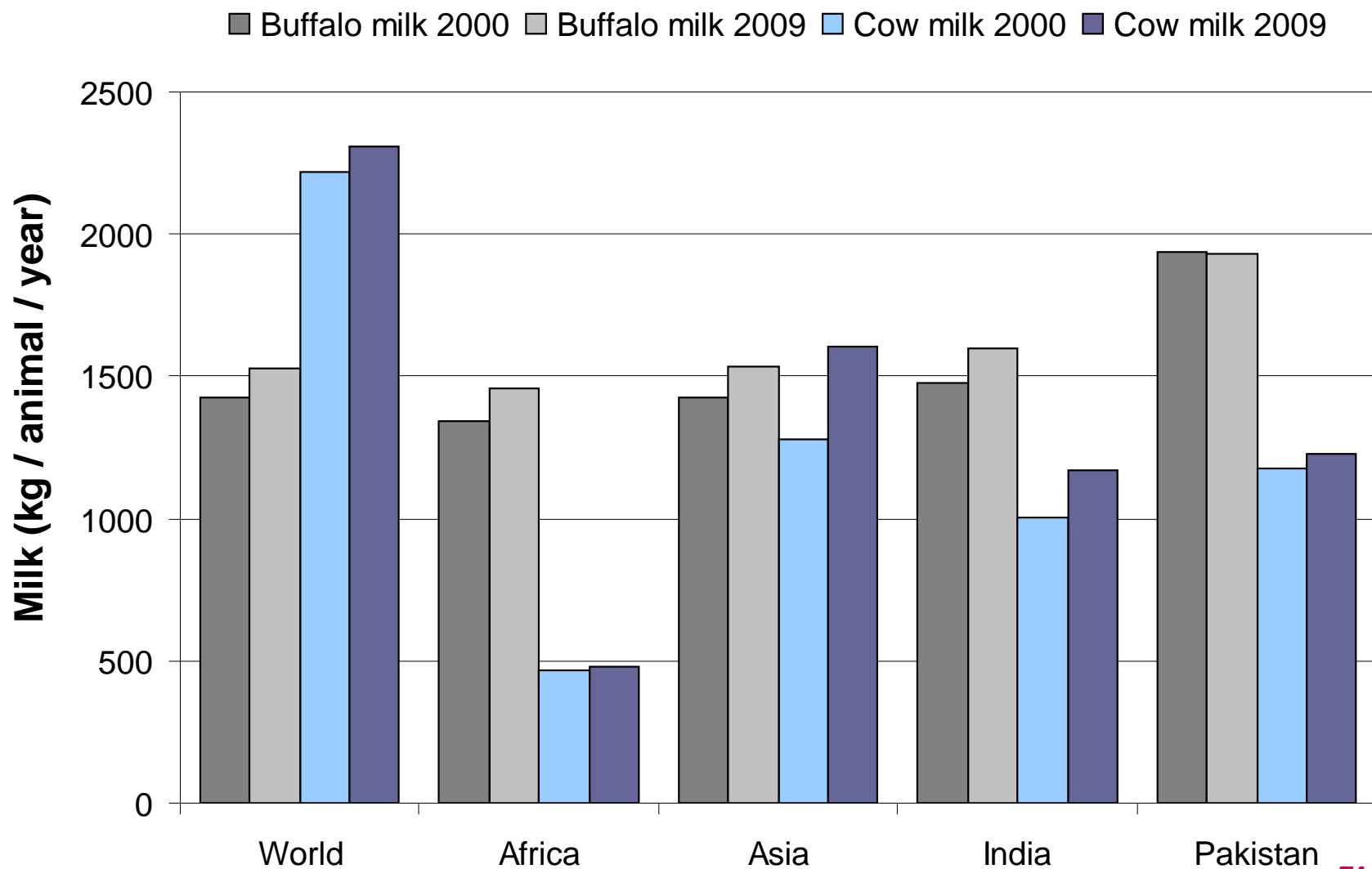
University of Agriculture Faisalabad, Pakistan

Global and regional production of cow and buffalo milk



FAOSTAT 2011

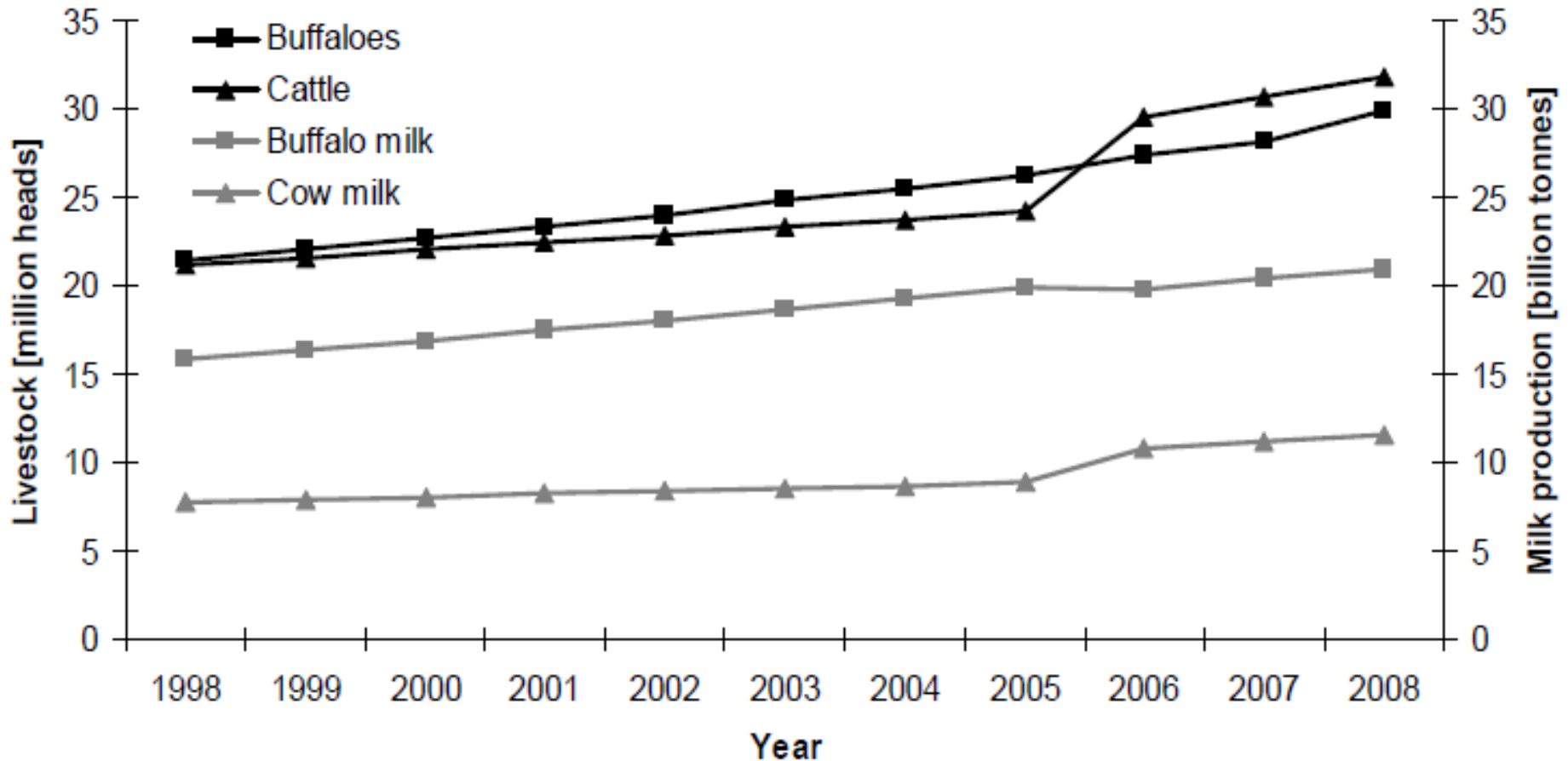
Global and regional milk yield per dairy animal



FAOSTAT 2011

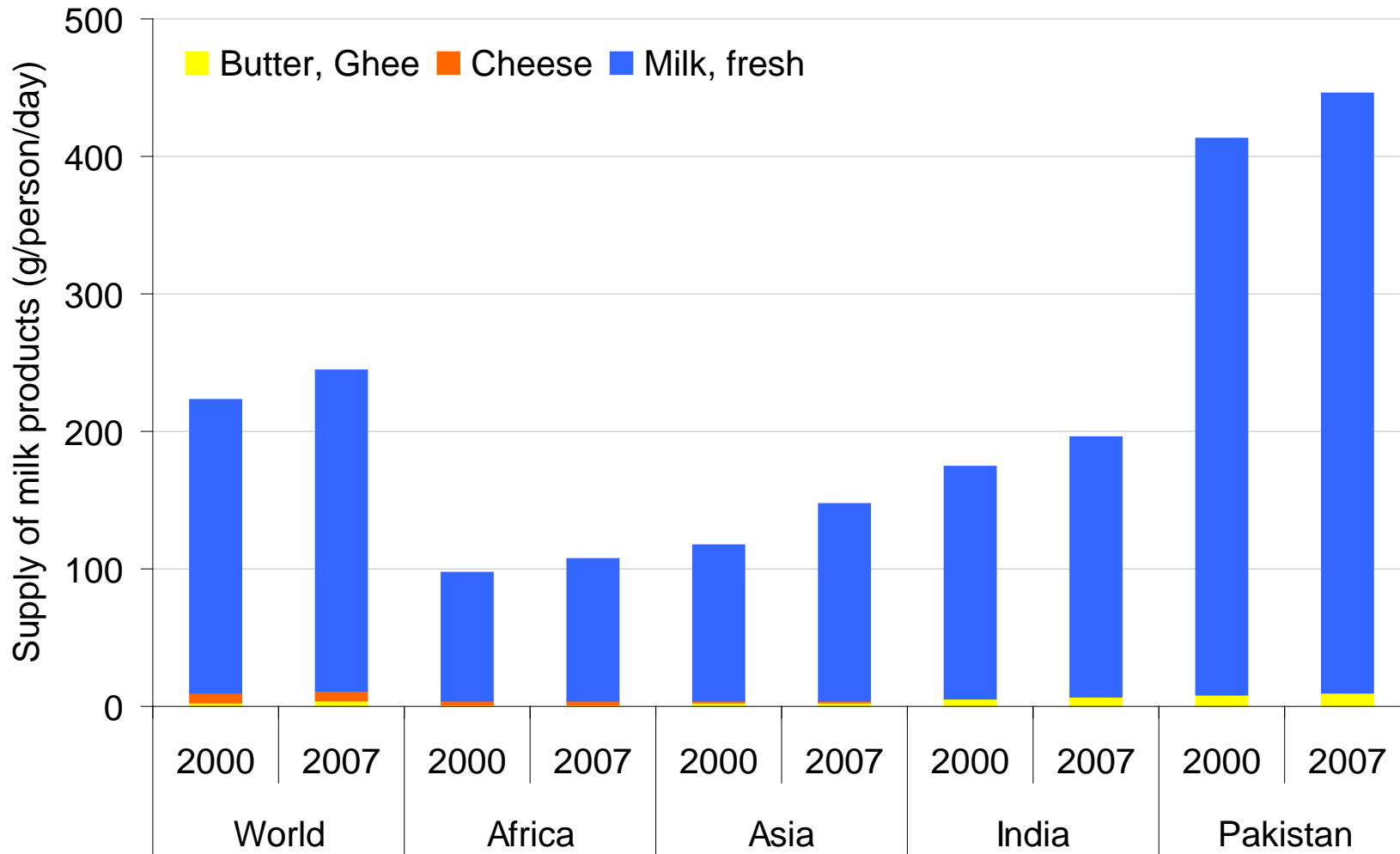
Recent development of dairy production in Pakistan

20% of milk from (peri-)urban producers!



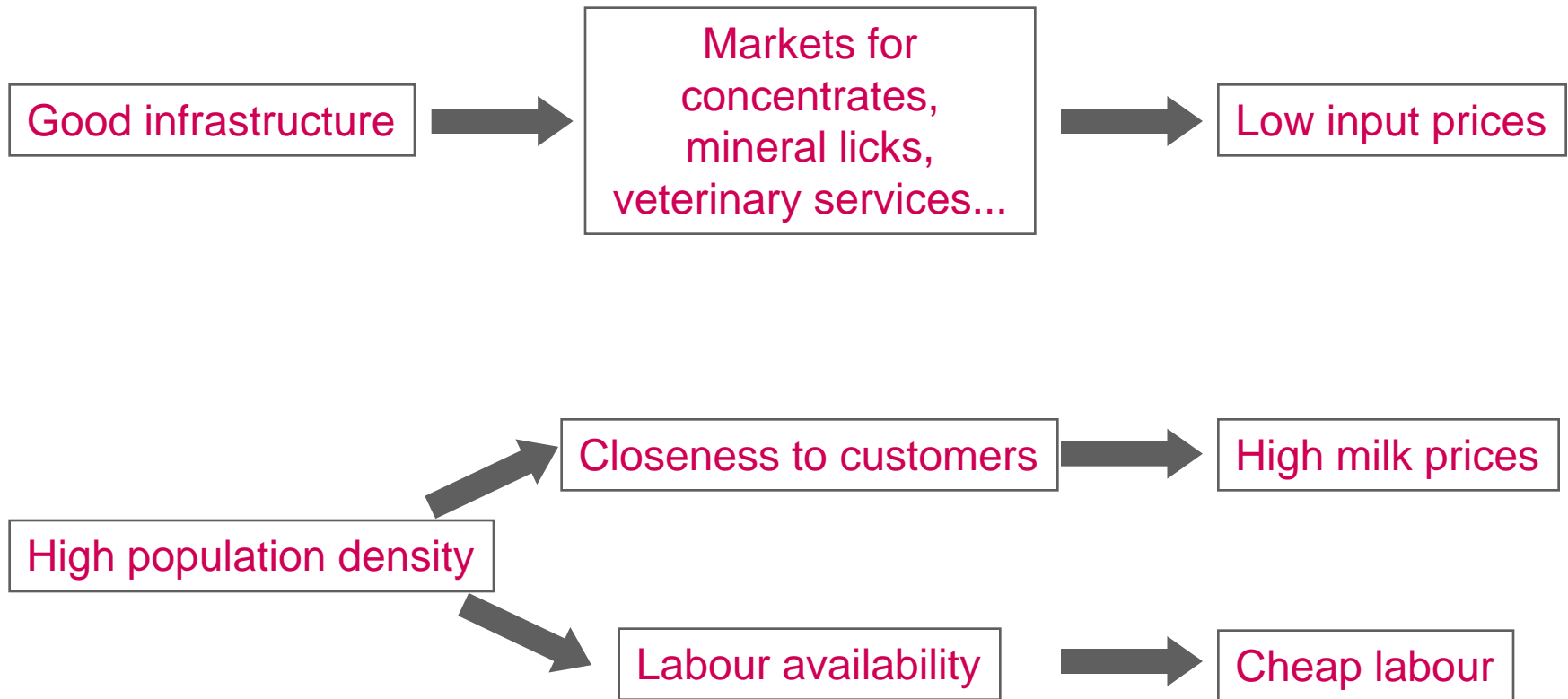
FAOSTAT 2010

Global and regional supply of milk and milk products

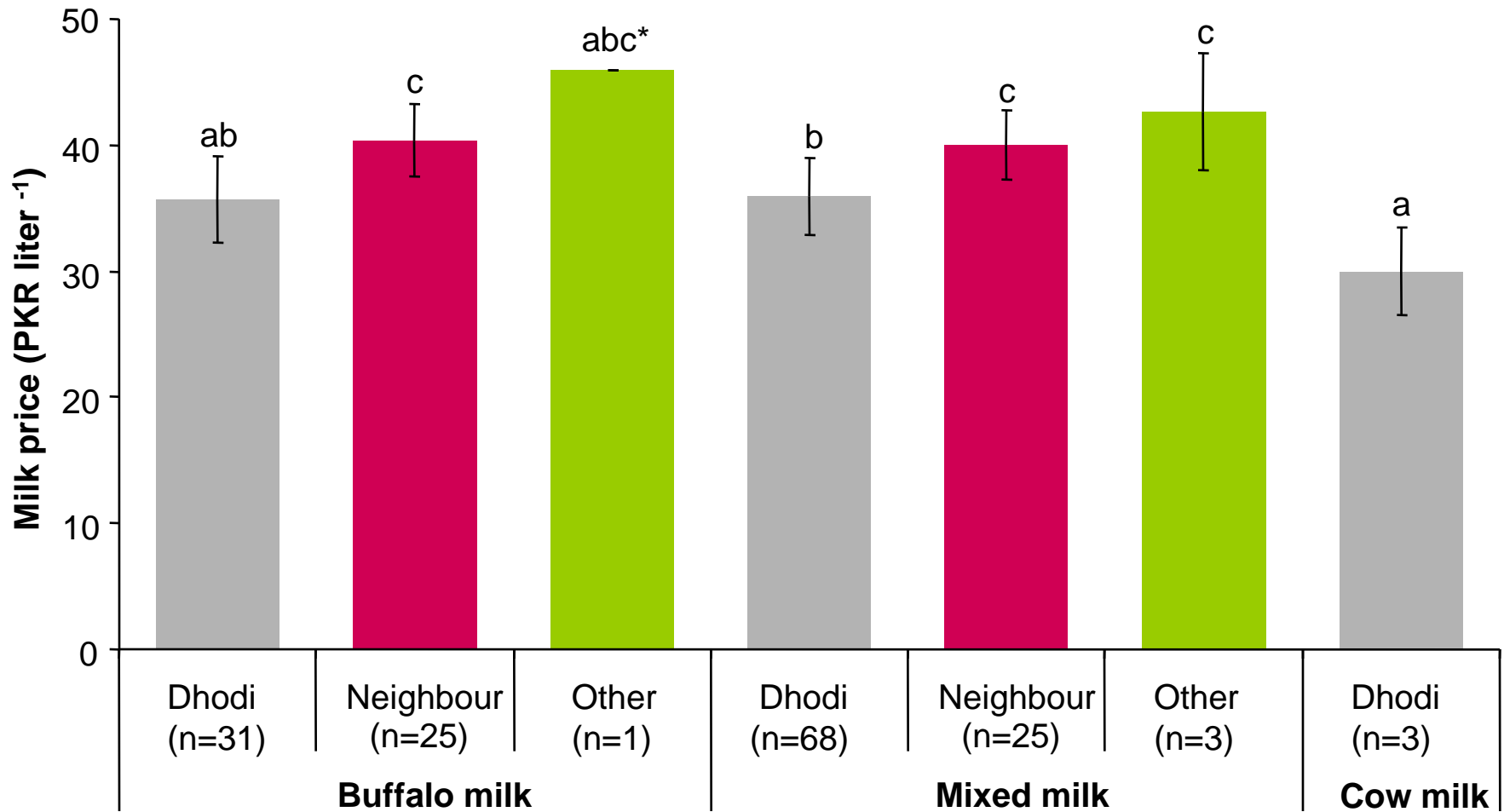


FAOSTAT 2011

Urban dairy – advantages for producers



Price variation for raw milk in Faisalabad, summer 2009



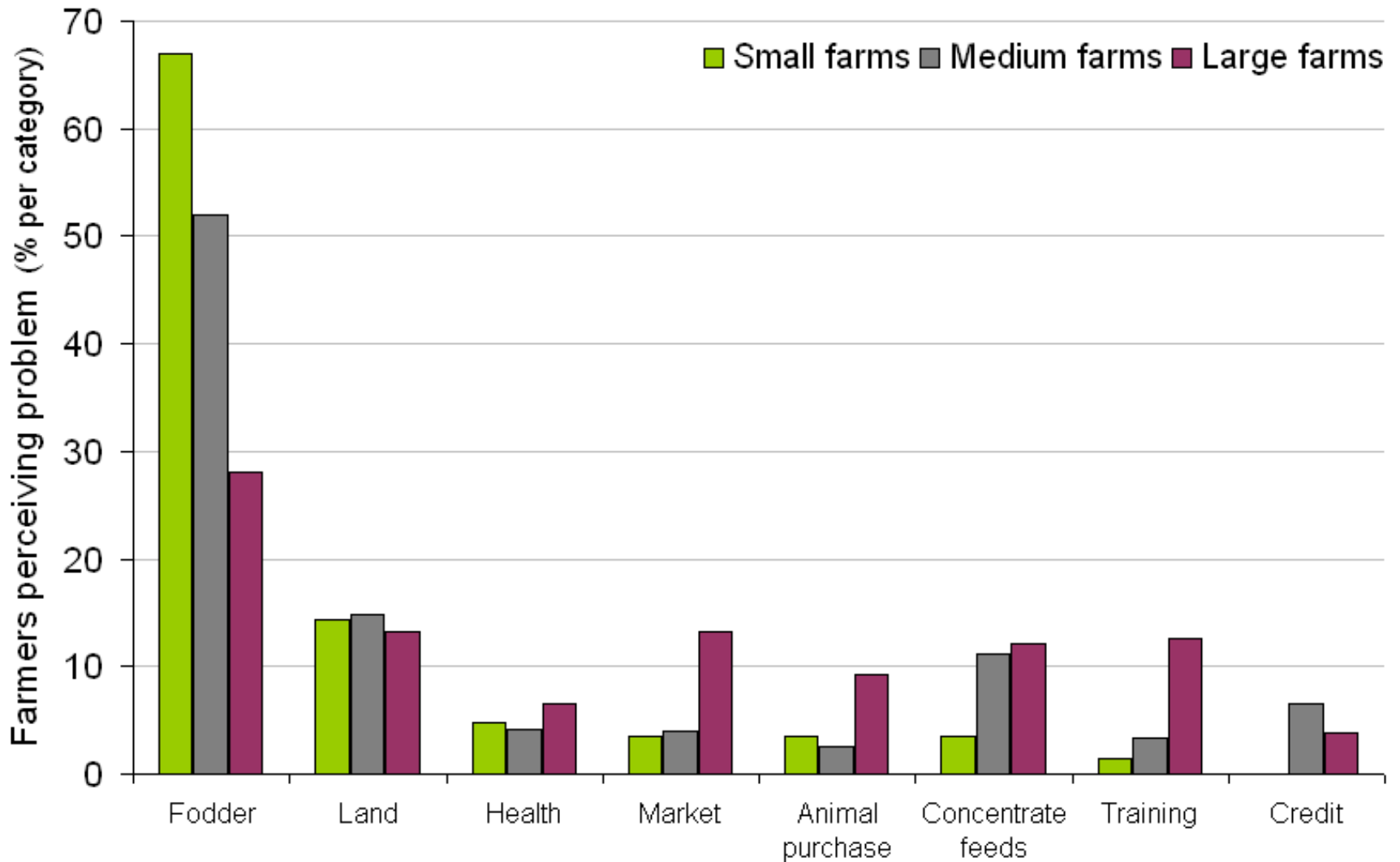
* Significant differences, Mann-Whitney-U-Test, $\alpha=0.05$

Hagmann 2011

Some insights into raw milk sale in Faisalabad

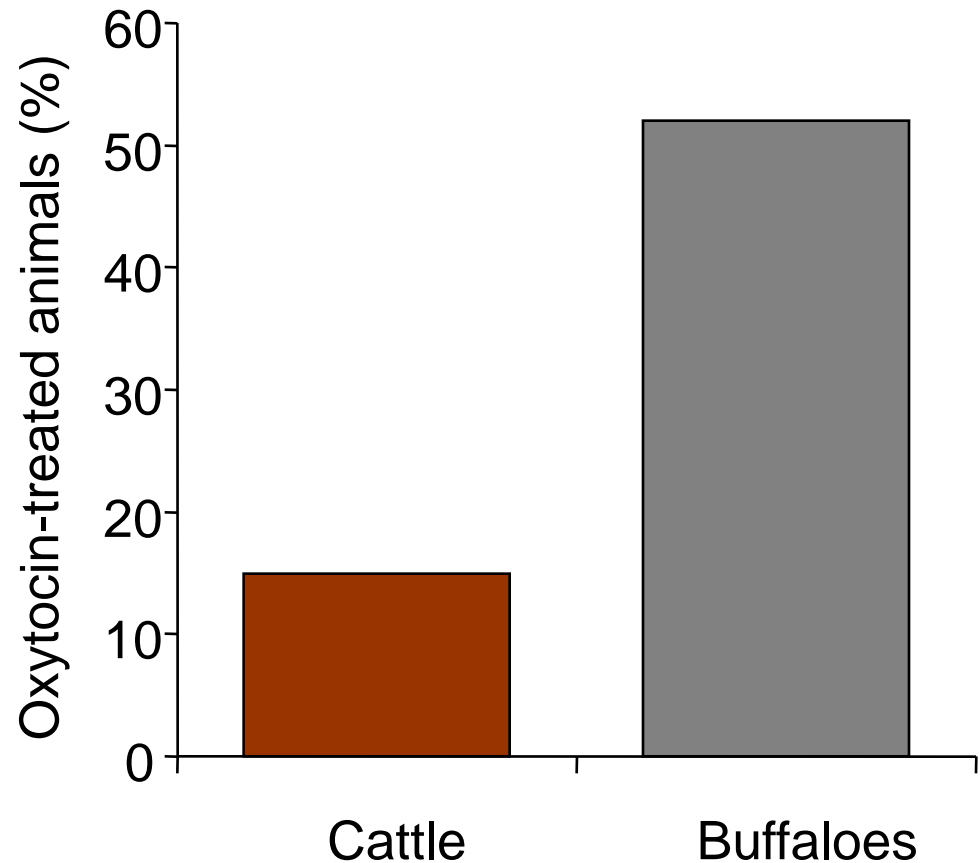
- 98% of urban farmers sell milk
- 97% sell mixed milk (cattle and buffalo)
- **77% of produced milk is sold** (range: 0 to 98%)
- Prices in 2009: 30 - 46 PKR l⁻¹ (buffalo), 25 - 48 PKR l⁻¹ (mixed)
- Influences on prices
 - Geographical location: no
 - Quality: partly
 - Season (less milk in summer): partly
 - 19% report seasonal difference
 - prices in summer ca. 7% higher than in winter
 - Client / marketing skills: yes

Urban dairy – the problem of roughage availability



Data from Faisalabad; Moeen-ud-Din & Babar 2006

Urban dairy – the excessive use of veterinary products



Data from Faisalabad; Tariq & Schlecht 2011

Urban dairy – the problem of milk hygiene



Bacterial contamination levels of milk collected in Sikasso (Mali, W-Africa)

Milk	n	Geometric mean MPN 100 ml ⁻¹	
		Faecal coliforms	<i>E. coli</i>
Fresh	5	3.9 x 10 ⁴	9.7 x 10 ⁵
Curdled	4	6.2 x 10 ⁶	49.7 x 10 ⁵

MPN: most probable number; cfu: colony-forming unit.

WHO threshold for *E. coli*: ≤10 cfu ml⁻¹

Sources of contamination:

- Animals (diseases)
- Milk hygiene at farm (milker, milking, containers)
- Milk processing procedure

Amadou et al. 2011

Urban dairy – the problem of dung disposal

Data from Faisalabad; Hagmann 2011

40% Waste

- Odor
- Emissions
- Leaching
- Diseases



51% Fuel

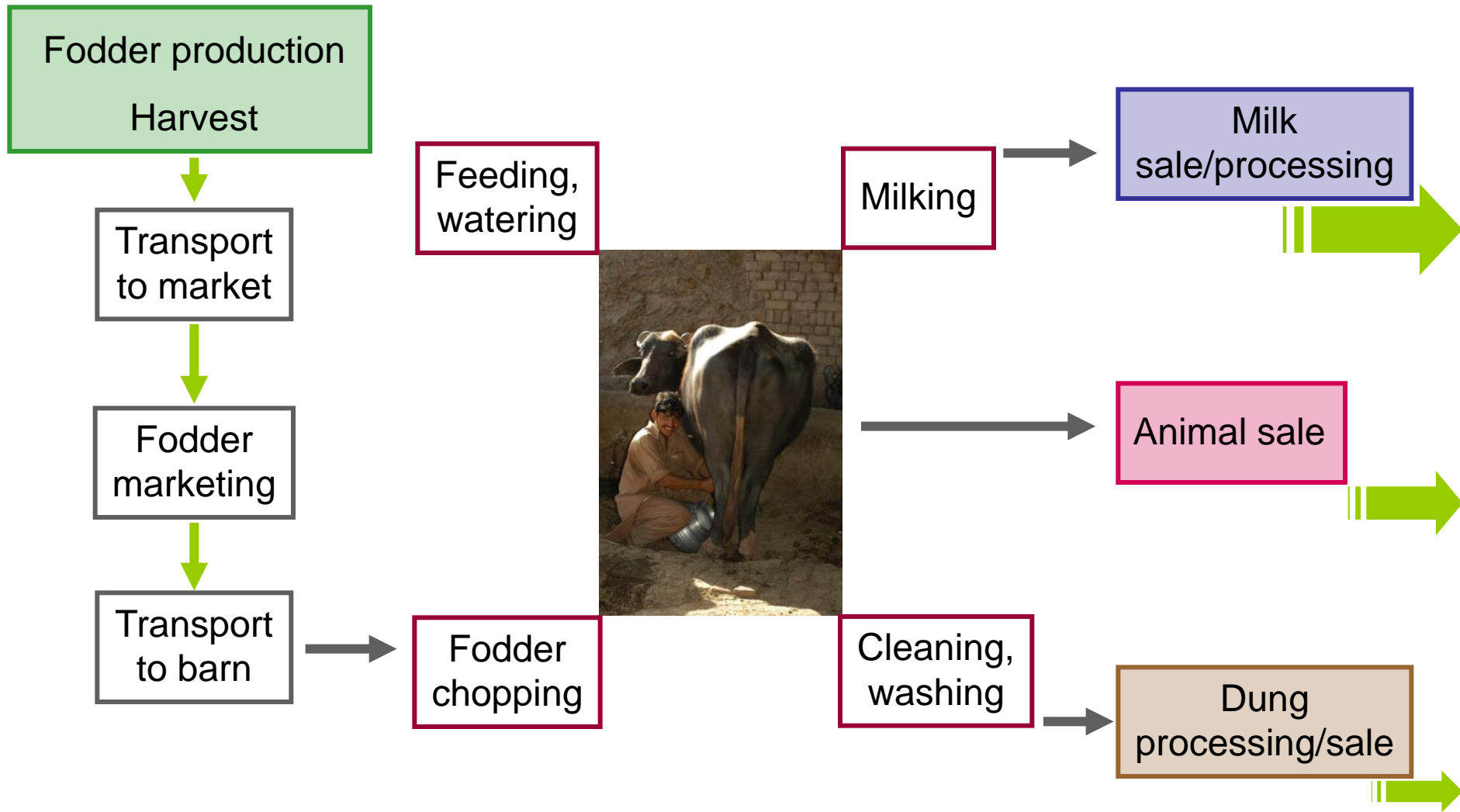
- Soil degradation
- Emissions
- Health problems



28% Fields



Urban dairy production – the value chains



Urban dairy production – jobs along the value chain



Urban dairy production – jobs along the value chain



Overview

Urban dairy

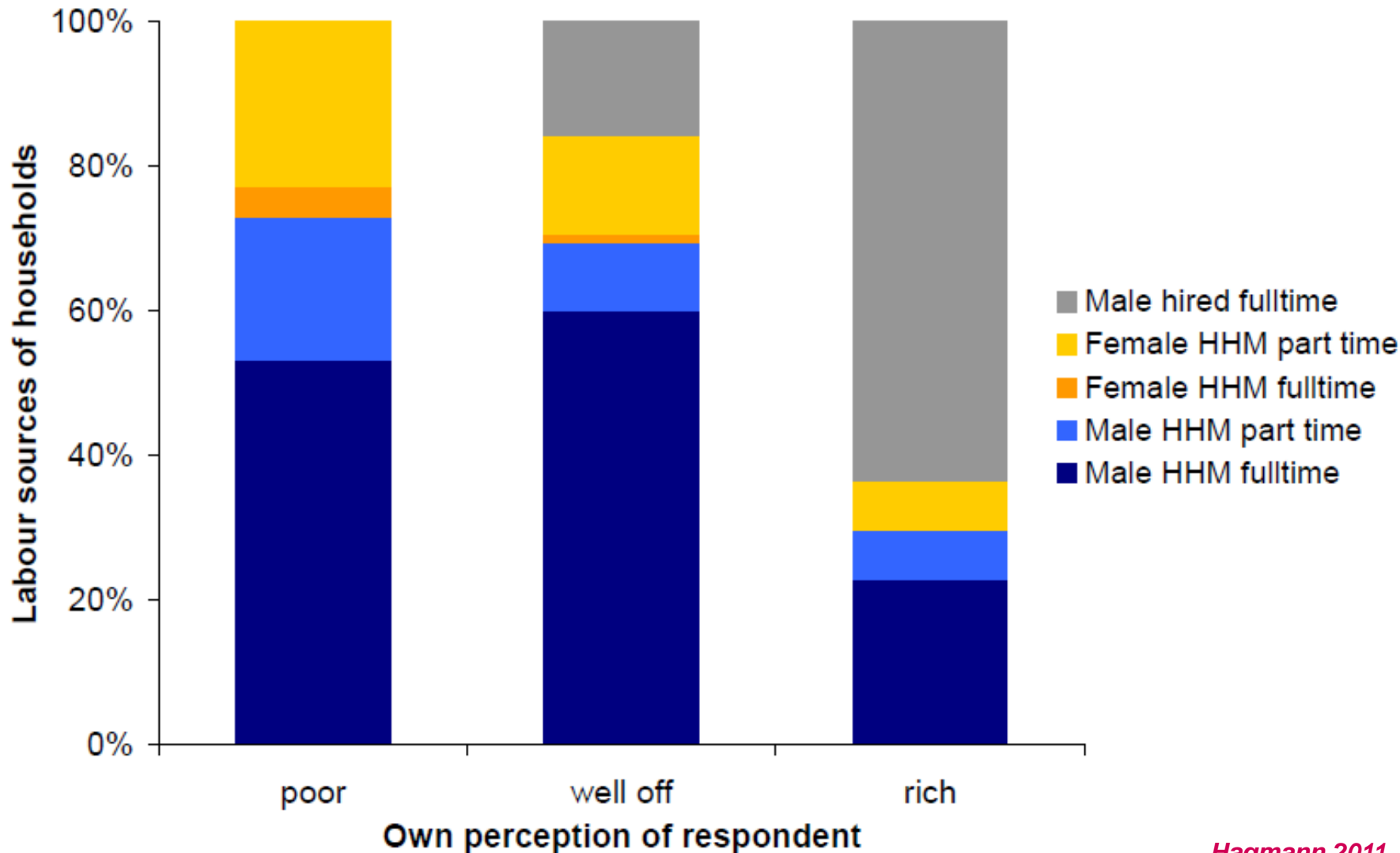
Value chain

Jobs

Conditions

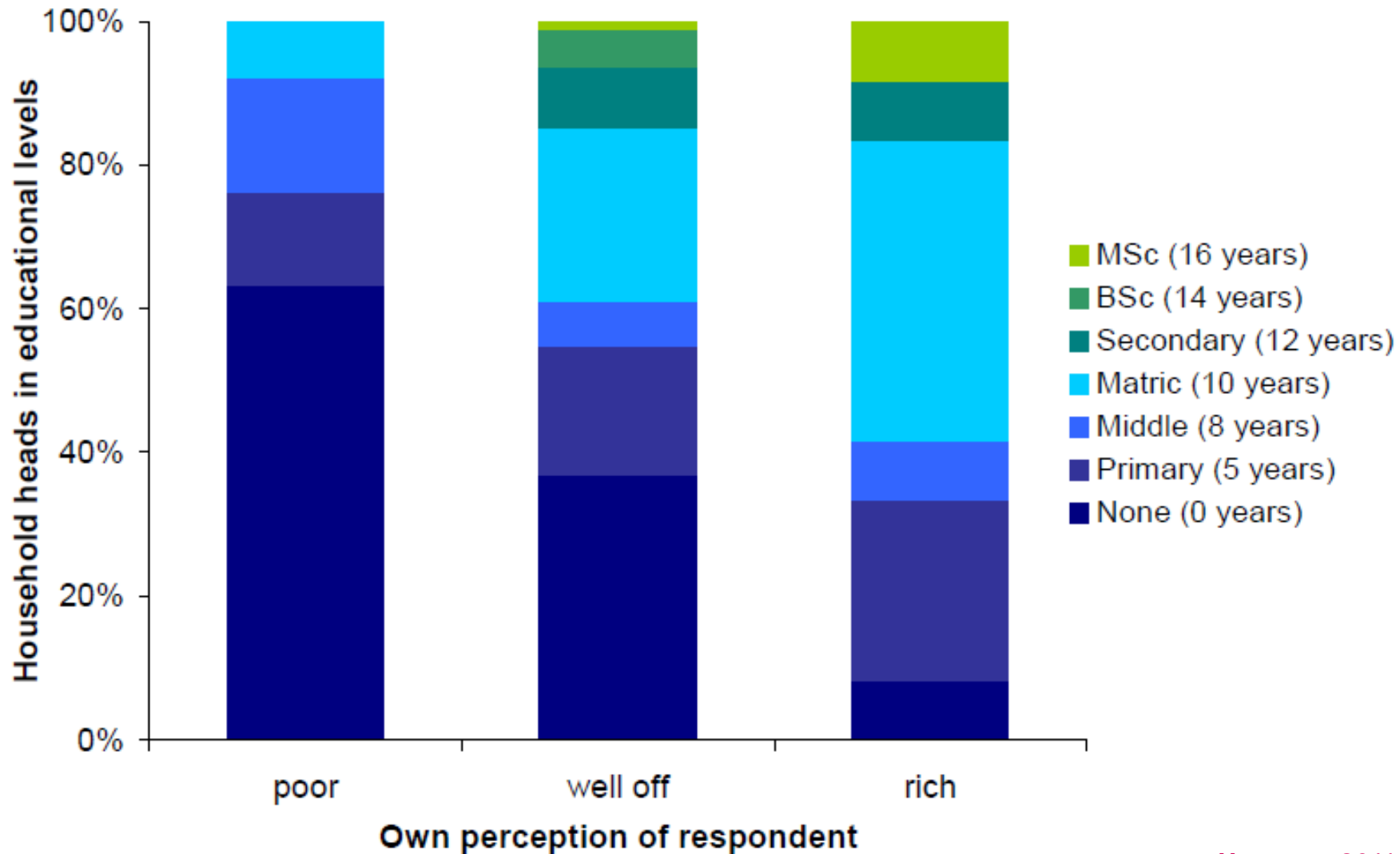
Outlook

Gender repartition of jobs at dairy barns in Faisalabad



Hagmann 2011

Educational level of urban dairy farmers in Faisalabad



Hagmann 2011

Urban dairy production – jobs along the value chain

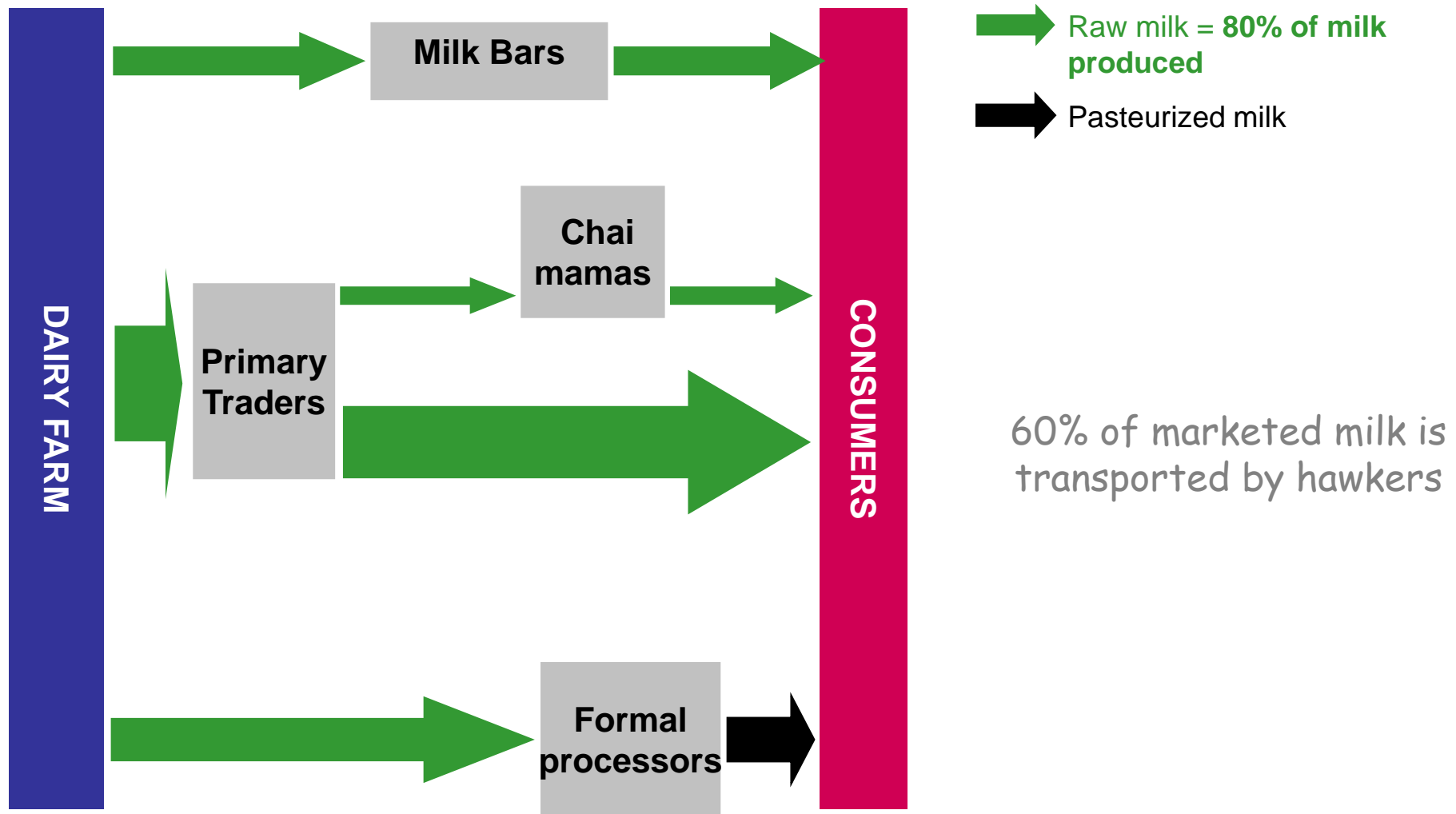


Jobs along the urban milk marketing schemes in Kenya

- Dairy sector accounts for: 3.5% of Kenya's GNP
~14% of Kenya's agricultural GDP
- >660,000 farm household livelihoods
- 365,000 farm jobs for external labour
- 40,000 jobs in milk processing activities
70% of the jobs in milk processing are in the informal sector,
mostly in (peri-)urban areas

Staal et al. 2001

Jobs along the urban milk marketing schemes in Kenya



Berem 2010

Urban dairy production – jobs along the value chain



Requirements for educated labour along the dairy value chain

Dairy value chain requires mostly unskilled labour → low wages

	Fodder supply chain	Dairy barn	Milk delivery	Milk processing
Unskilled labour	yes	yes	yes	

Schematic assessment of working conditions

Problematic conditions on the supply side (field/barn);
better conditions on the delivery side (processing/marketing)

	Fodder supply chain	Dairy barn	Milk delivery	Milk processing
Physically easy	no	no	maybe	quite ok

Urban dairy production – outlook

Urban dairy value chains numerous jobs for unskilled labour
low wages
difficult working conditions



Modernizing milk production & marketing (Western models) will:

- increase demand for trained / educated labour
- improve working conditions
- reduce jobs at barn, milk transport & processing levels



→ **Initiate dairy farmer cooperatives / producer associations** to:

- harmonize milk production & quality (self-controlled standards)
- rise competitiveness of small/medium farms towards companies
- secure adequate milk prices
- successfully negotiate with city planners, real estate investors...

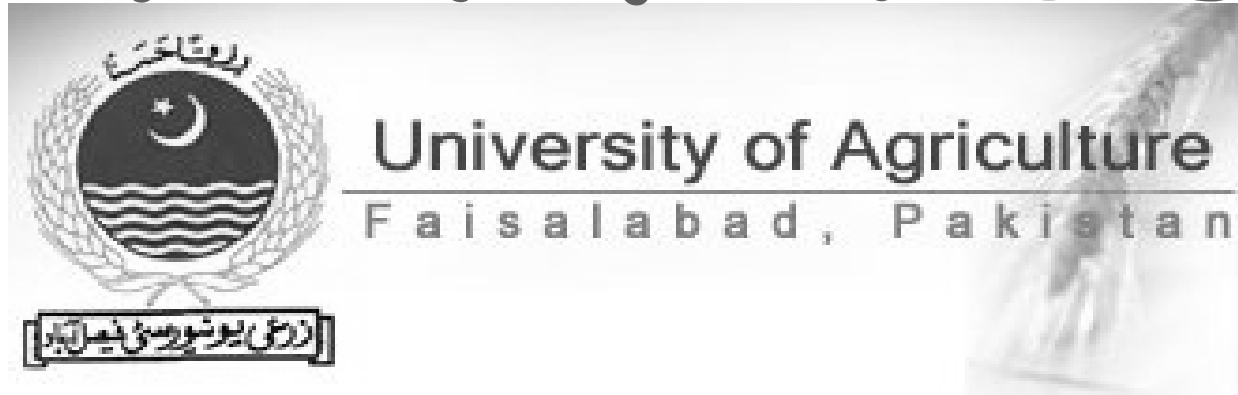
→ **Maintain jobs and improve income along the value chains**

Urban dairy production – probable fields of research

Along the different value chains:

- Income of farmers, entrepreneurs and labourers
 - Working conditions, gender aspects
- so far
very limited insights*
- How useful are biogas digesters for (peri-)urban dairy households, and how would they impact on dung collectors?
 - What happens as cities grow, and rural farmers become urban?

THANK YOU



For data and pictures:

MSc. H. Amadou; Prof. Dr. A. Bürkert; MSc. J. Hagmann; MSc. M. Tariq



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