

Comparing the live and dressed poultry trading chains in Bangladesh

Jinnat Ferdous^{1*}, Anne Conan², Md. Helal Uddin³, Abu Shoeib Muhammad Mohsin³, Pangkaj Kumar Dhar³, Mokter Hossain³, Nurun Nahar Bithi⁴, Md. Abu Sayeed⁵, Mohiuddin Tareq⁶, Lorraine Chapot⁷, Mahmudul Hasan⁸, Rashed Mahmud³, Robyn Alders^{9,10}, Suman Gupta¹, Justine Gibson¹, Fournie Guillaume⁷, Md Ahasanul Hoque³, Joerg Henning¹

1 School of Veterinary Science, The University of Queensland, Australia
 2 City University of Hong Kong
 3 Faculty of Veterinary Medicine, Chattogram Veterinary & Animal Sciences University, Chattogram, Bangladesh
 4 Jhenaida Govt Veterinary College, Bangladesh
 5 Institute of Epidemiology, Disease Control & Research (IEDCR), Dhaka, Bangladesh
 6 CP Bangladesh LTD., Hilly Branch, Dinajpur
 7 Department of Pathobiology and Population Sciences, Royal Veterinary College, London, UK
 8 Bangladesh Livestock Research Institute (BLRI), Savar, Bangladesh
 9 Development Policy Centre, Australian National University, Canberra, NSW, Australia
 10 Global Health Programme, Chatham House, London, UK

* j.ferdous@uq.edu.au



Introduction

- Poultry meat and egg production provide affordable animal protein to customers in Bangladesh, but also represent an important employment opportunity
- Poultry value chains are more diverse in Low- and Middle-Income Countries (LMIC) like Bangladesh compared to high-income countries
- Poultry meat is provided to customers in LMIC either as live poultry or as slaughtered carcasses ('dressed poultry')
- Production and trading practices of poultry play an important role in the spread of avian and zoonotic food-borne pathogens

Objectives

- Identify the actors involved in the live poultry and dressed poultry trading chain in Bangladesh
- Describe how actors are 'connected' when trading live or dressed poultry
- Analyse and compare the trading practices and transactions between different actors involved in the two chains

Methods

- Questionnaire based surveys of actors involved in live poultry trading chain
 - LBM managers (N=48)
 - Stall owners/vendors trading poultry (N=412)
 - Mobile poultry traders/MM (N=172)
 - 'Feed and chick dealers' (N=157)
- Key informant interviews of actors involved in dressed poultry trading chain
 - Slaughtering companies (N=9)
 - Director of distribution points of the largest chain supermarket in Dhaka (N=1)
 - Supermarkets which trade dressed poultry in Chattogram (N=5)

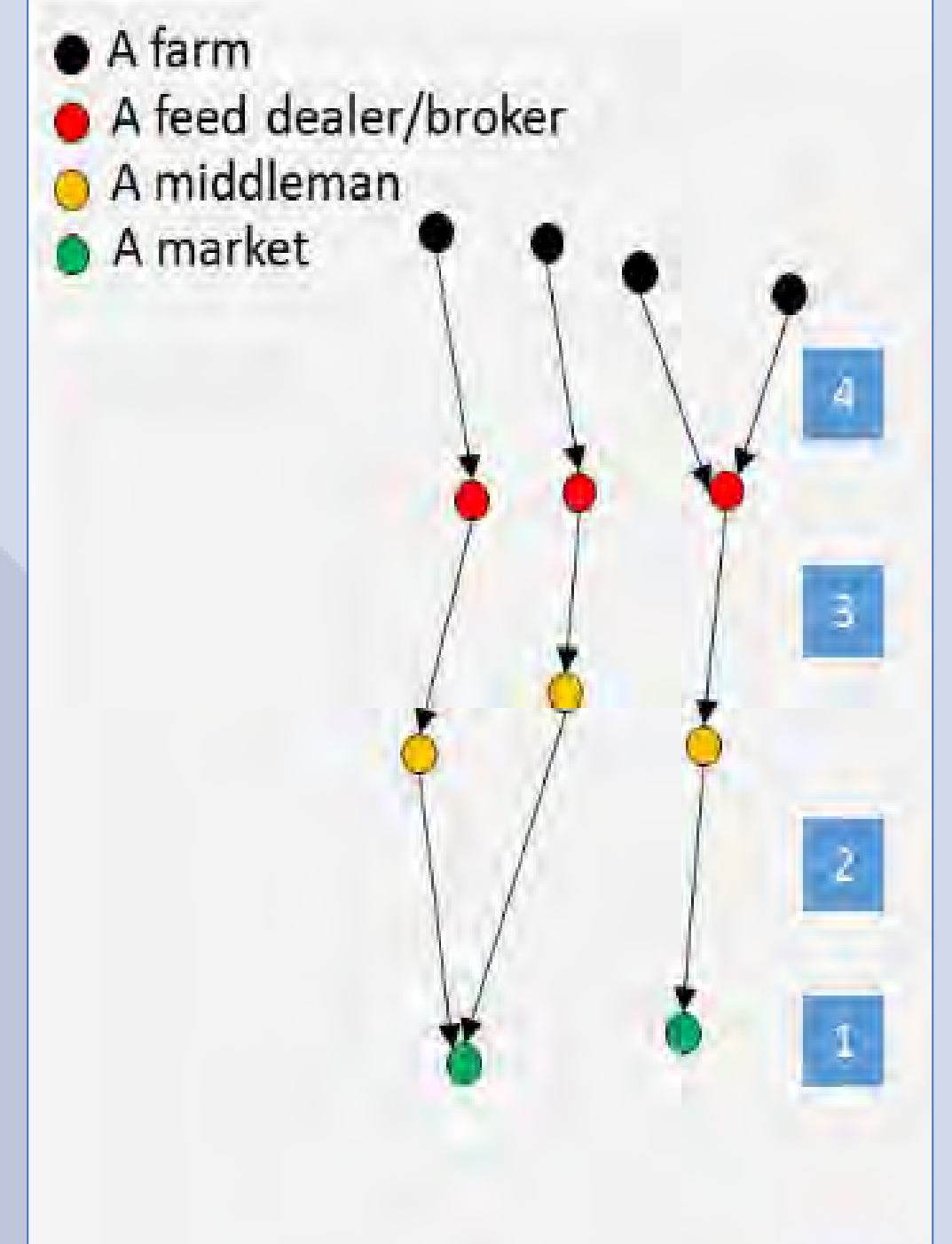


Figure 1. Tracing the actors involved in live bird trading

- Duration: Jun 2020 - Feb 2021
- *Planned analysis*: Descriptive statistics and social network analysis

Results – Live poultry trading chain

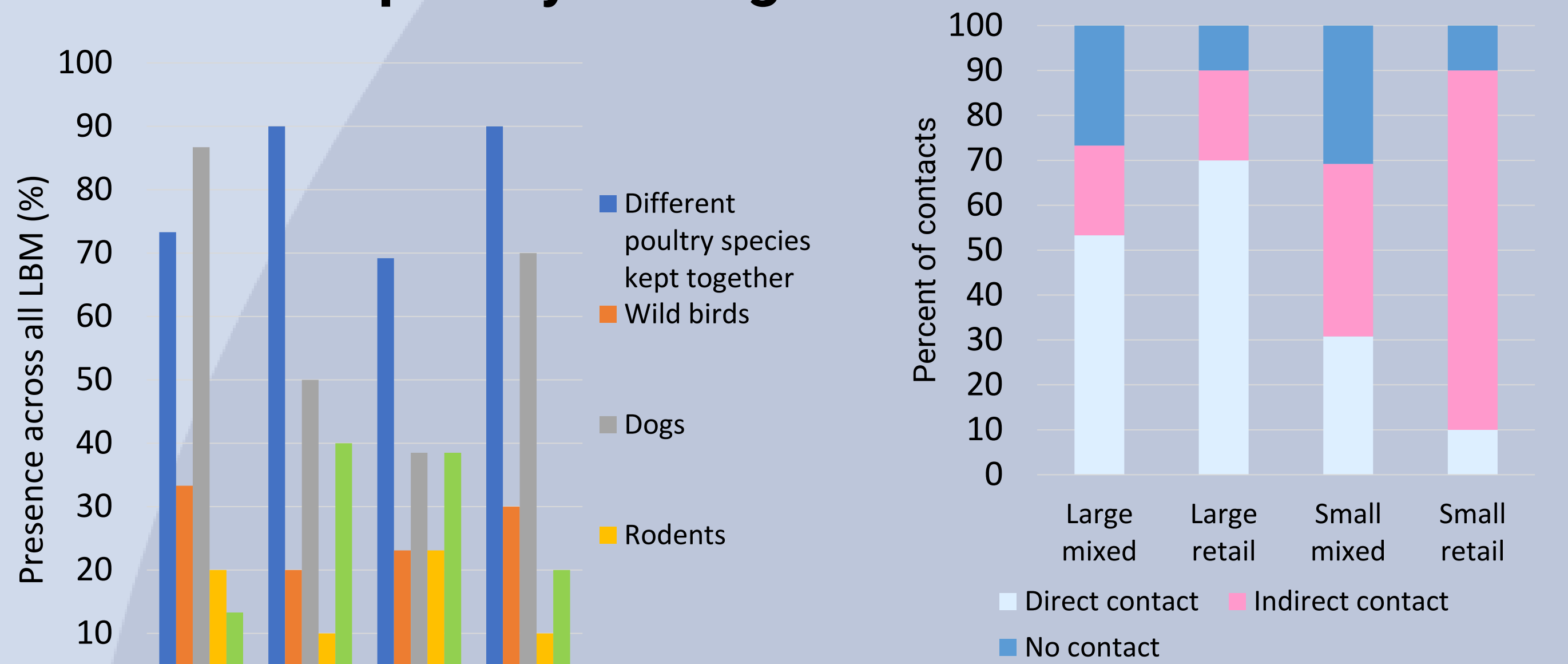


Figure 2. Observation conducted at LBMs

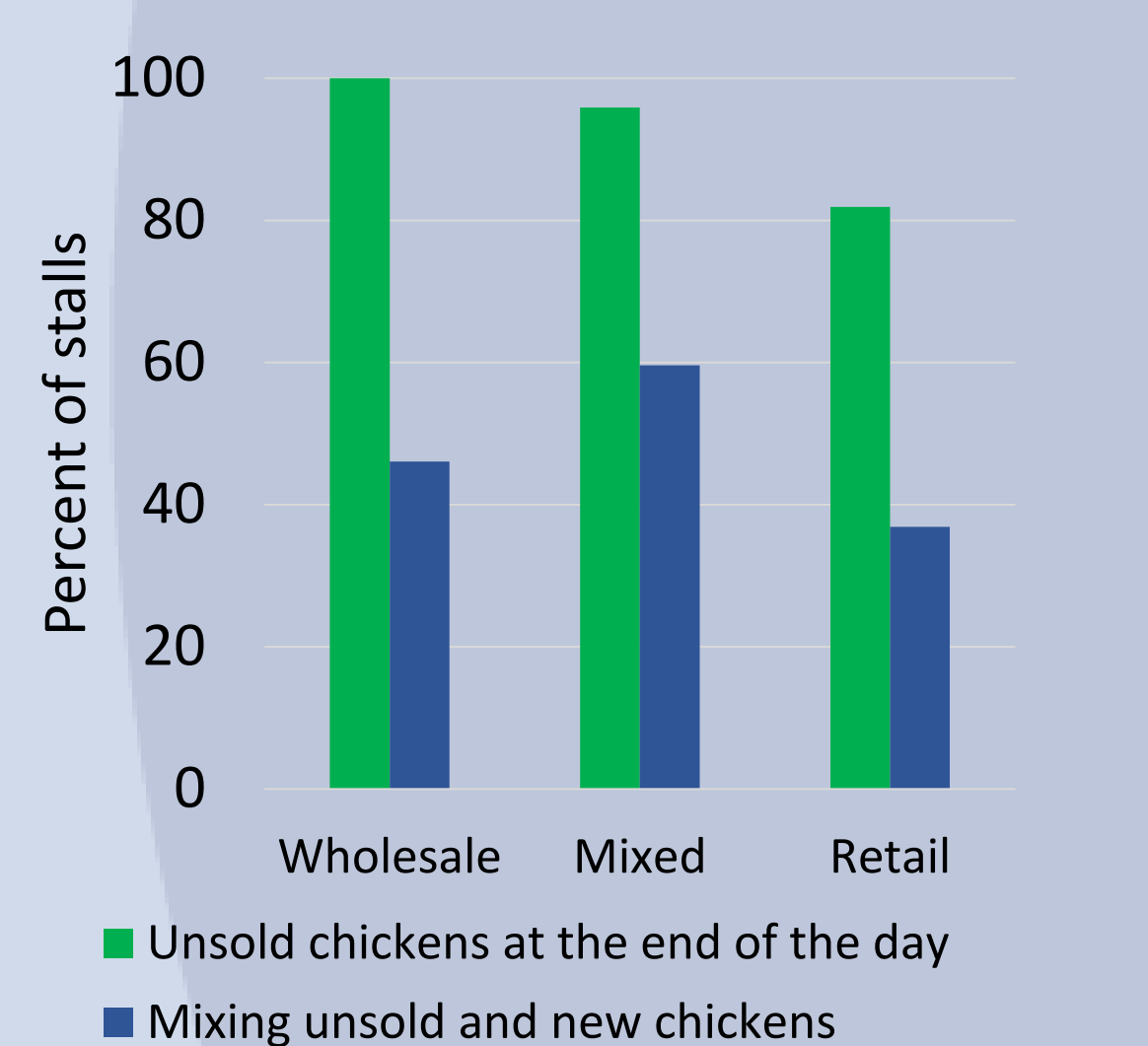


Figure 3. Contacts between chickens and other poultry species at LBMs

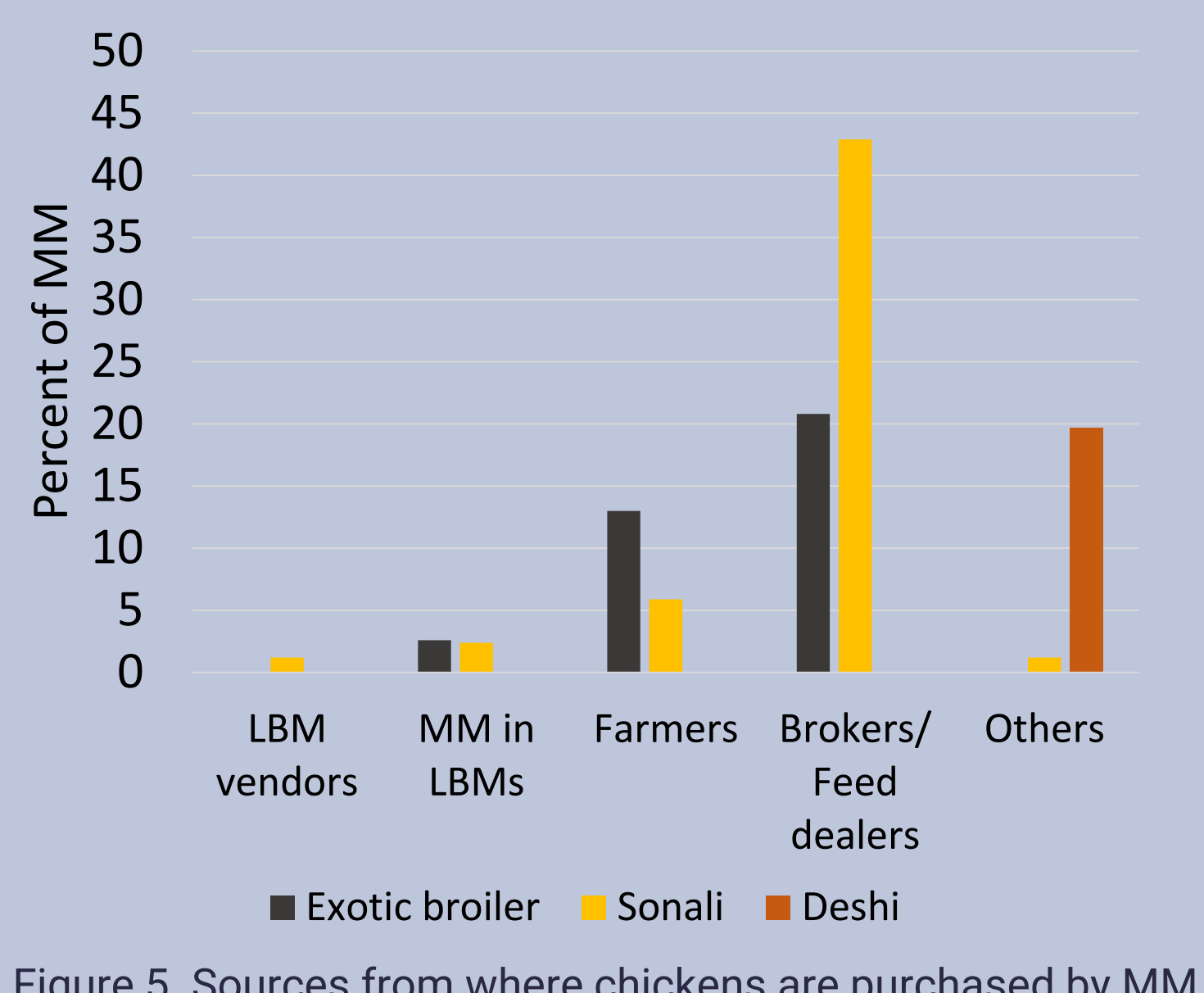


Figure 4. Unsold chickens by type of stalls at LBMs

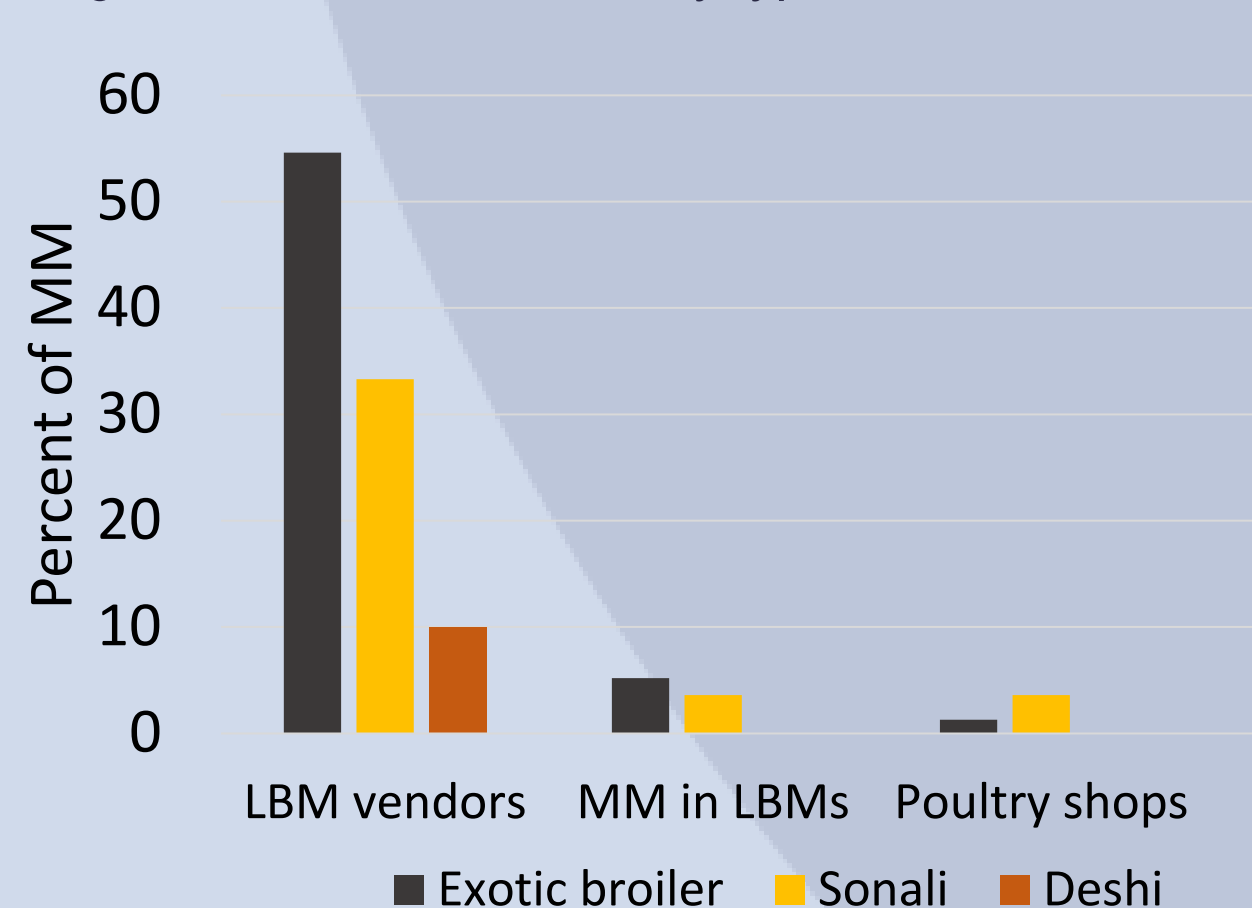


Figure 5. Sources from where chickens are purchased by MM

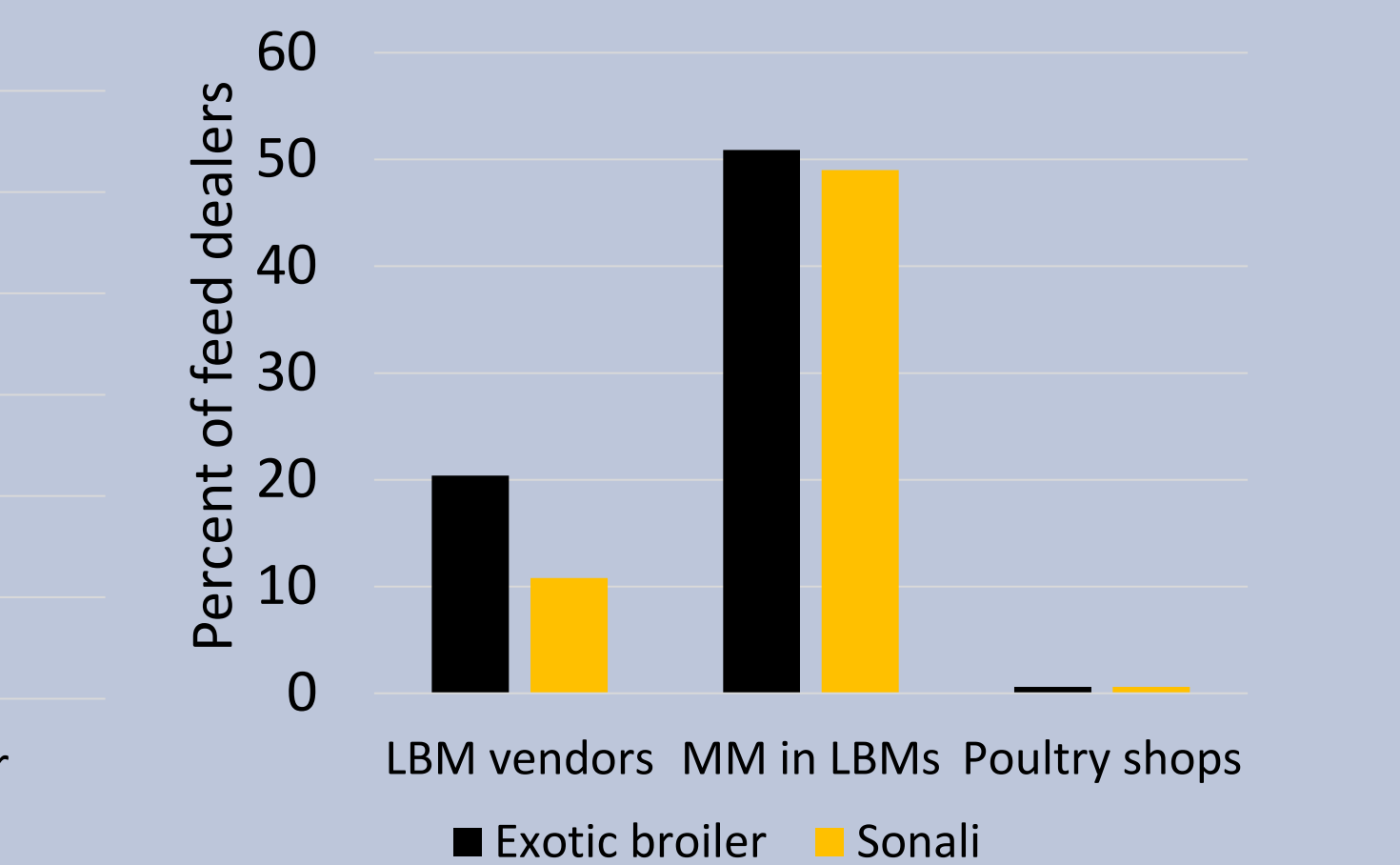


Figure 6. Destinations to where chickens are sold by MM

Figure 7. Destinations to where chicken are sold by feed dealers

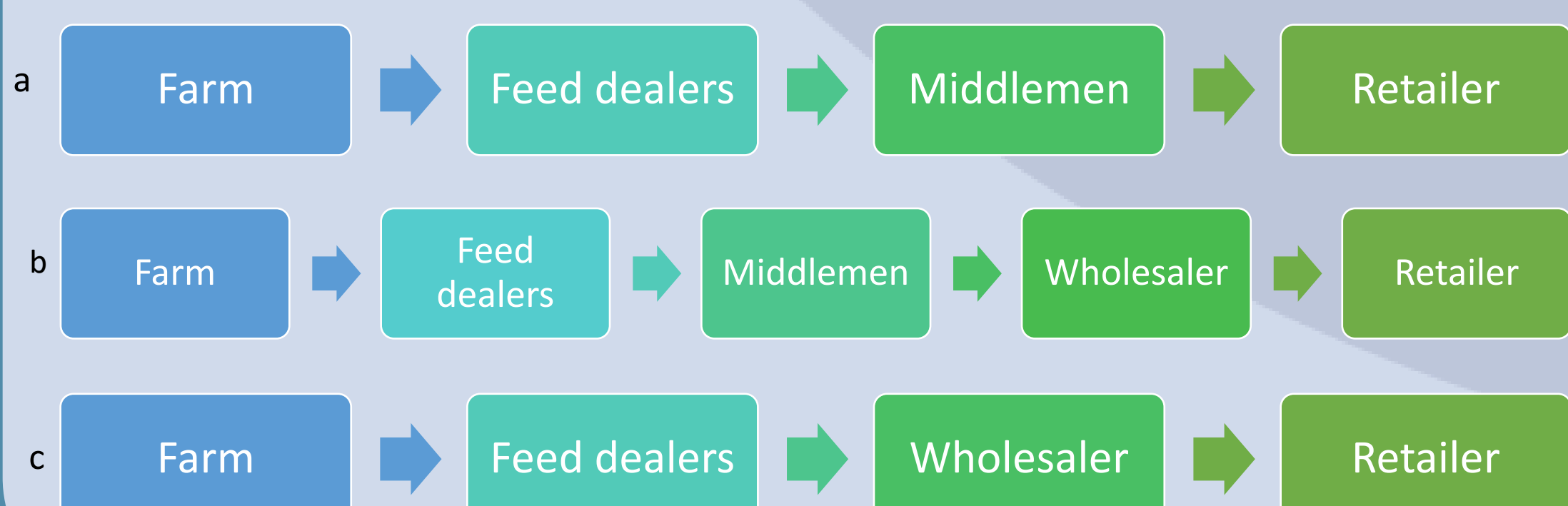


Figure 8. Trading paths within the live poultry trading chain of Bangladesh (Frequency of paths by poultry species: a. Exotic broiler 56.2%, Sonali 47% b. Exotic broiler 7.2%, Sonali 6.3% c. Sonali 7.9%)

Results – Dressed poultry trading chain

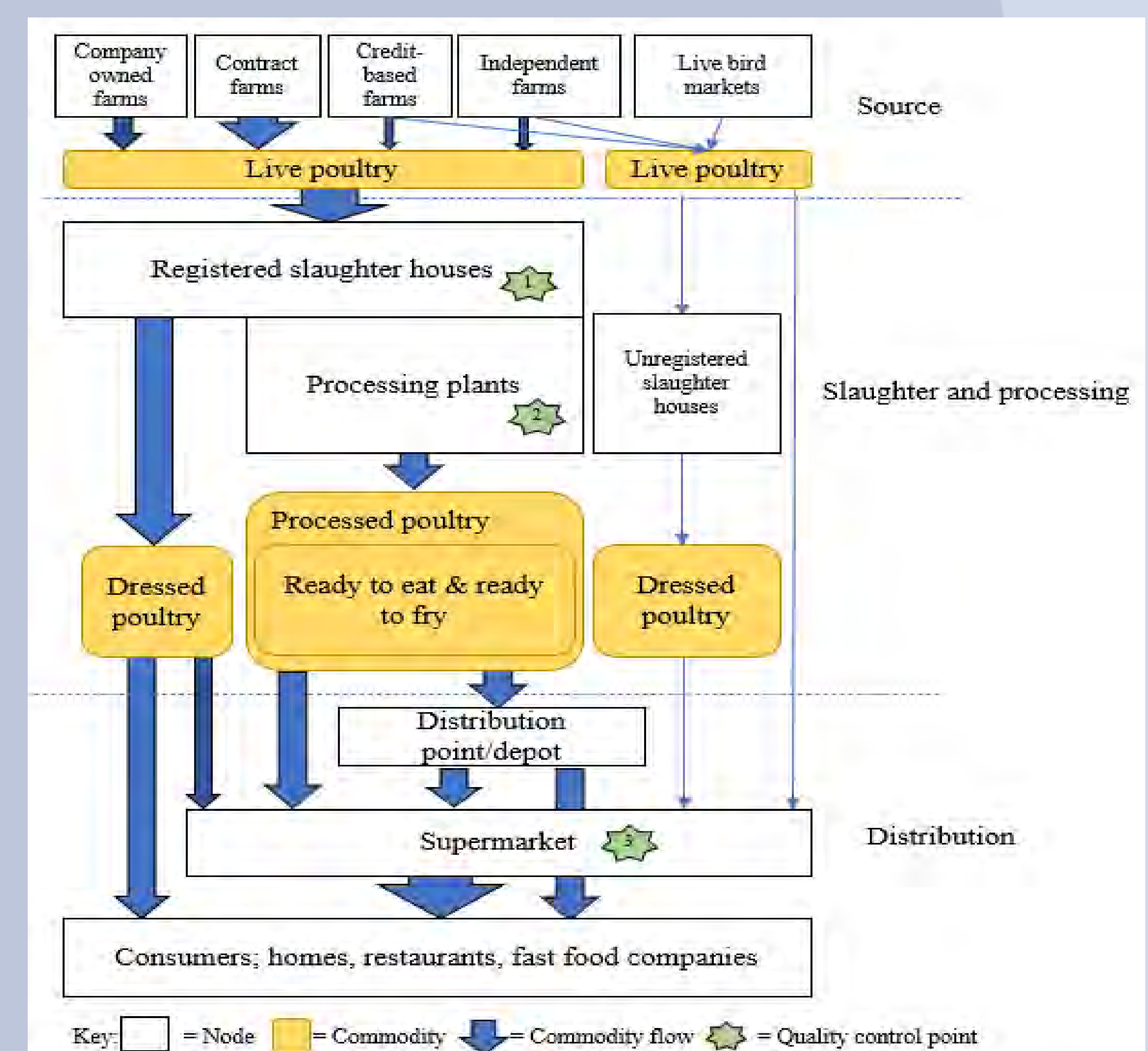


Figure 9. Structure of the dressed poultry trading chain in Bangladesh

Discussion

- In the live poultry trading chain, significant differences ($p < 0.05$) by market type (large retail, small retail, large mixed and small mixed market) were found for:
 - Number of MM operating at markets
 - Number of poultry sold per day
 - Contacts between types of chickens and between species of poultry
 - Presence of dogs
 - Mixing of newly supplied birds with unsold birds
- Live and dressed poultry trading chains are closely connected, with multiple crossover points in the supply of birds
- Consumer perception that dressed poultry has a lower risk for food-borne pathogens than birds from LBMs needs to be treated with caution
- Unsubstantiated consumer confidence in dressed poultry may inadvertently increase the risk of infection with food borne pathogens in humans