Present and future use of antimicrobials in pigs in developing countries and case studies from Uganda and Vietnam

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Demand for pork is growing rapidly in developing countries, and will be mostly met by intensive production. Although this can produce large quantities of affordable meat, it can have environmental, social and human health externalities. We report on recent studies conducted by ILRI and partners on antimicrobial use in pork production in developing countries and antimicrobial resistance (AMR) in pork.

There is little information on use of antibiotics in developing countries. To help fill this gap, we demonstrate how projected growth in demand for pork products is linked to population and GDP and use this association to map global production. Based on estimates of antimicrobial use in pork production we predict overall use, now and into the future. This shows large increases in use, especially in the BRICS (Brazil, Russia, India, China and South Africa).

We present case studies AMR of Salmonella isolated from traditional pig value chains in Uganda and more advanced value chains in Vietnam. In Vietnam, 12% of our pork samples tested positive for antimicrobial residues; previous studies found AMR in 13-50% of isolates and high usage of antimicrobials by farmers. However, Salmonella from pigs in Uganda, which had never received antibiotics, had similar high levels of multi-drug resistance.

The issue of AMR in developing countries is complex. Livestock may be the sources or the victims of AMR, or both. While many countries have had considerable success in reducing antimicrobial use in livestock, developing countries face a dual problem of lack of access to antimicrobials among some smallholders and over-use in the intensive sector. Policies aimed to reduce use may have negative impacts on food security. Moreover, agriculture in developing countries is likely to have a higher dependency on antibiotics because of a more disease-prone environment and lower levels of biosecurity. We discuss implications.

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