Introduction
This study forms part of a larger research component of the Eco-health Field Building Leadership Initiative (FBLI) in Vietnam to address human health problems related to agricultural intensification and human waste management in Ha Nam Province that involve multi-stakeholders and multi-institutions as well as policy makers. Hanam province is located within the Red River Delta in Northern Vietnam and is dominated by flat land. The natural conditions favour diverse agricultural activities. Poultry raising is the common farming practice.

Table 1: Average poultry flock size and proportion of farms by flock size class in Ha Nam province

<table>
<thead>
<tr>
<th>Flock size class</th>
<th>Indicators</th>
<th>2013</th>
<th>2008</th>
<th>Changes (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1: 1-49 birds</td>
<td>Average flock size (birds/farm)</td>
<td>21.17</td>
<td>15.82</td>
<td>25.27</td>
</tr>
<tr>
<td></td>
<td>% of total farms</td>
<td>73.62</td>
<td>73.93</td>
<td>-0.31</td>
</tr>
<tr>
<td>Group 2: 50-500 birds</td>
<td>Average flock size (birds/farm)</td>
<td>94.01</td>
<td>129.64</td>
<td>-37.90</td>
</tr>
<tr>
<td></td>
<td>% of total farms</td>
<td>23.79</td>
<td>22.12</td>
<td>1.67</td>
</tr>
<tr>
<td>Group 3: &gt;500 birds</td>
<td>Average flock size (birds/farm)</td>
<td>1467.14</td>
<td>1607.69</td>
<td>-9.58</td>
</tr>
<tr>
<td></td>
<td>% of total farms</td>
<td>2.28</td>
<td>3.93</td>
<td>-1.65</td>
</tr>
</tbody>
</table>

Results
Poultry production is still a major activity, accounting for 81% of the studied farms; intensive poultry production also exists with medium-scale flocks.

Generally, 60% of poultry farms increased their flock sizes during the five-year period between 2008 and 2013, and the rest decreased their farm sizes.

At the household level, the choice of poultry flock size and decision of flock size changes were influenced by many factors, such as prices of feeds and broilers, cash income from off-farm employment, access to credit and animal health services.

Different challenges of the three groups of farms were identified such as diseases, output price fluctuation, high input prices. Opportunities included high productivity breeds and vertical and horizontal integration opportunities (contract farming, farmer organization).

Objective
The objective of this study was to determine the factors influencing the transformation process of poultry production in Ha Nam province.

Materials and methods
Multistage and random sampling procedures were employed to select 461 farmers. Both structured questionnaires and in-depth interviews were used to collect data on the characteristics and dynamics of poultry farms. The information for 2013 and during the last five years was based on actual data, but information for 2008 was based on recall of household members. The collected information was analysed by applying descriptive statistics and qualitative analysis.

Conclusion
Poultry farming will continue to change in the future. While a range of factors have contributed to these changes, input and output prices and capital are the most important drivers. Future changes of poultry production processes will also depend on dynamic relationships among these factors.

Acknowledgments
This research is funded by IDRC. We appreciate the support of the local people and authorities.

Factors influencing the transformation processes in poultry production in Hanam Province, Vietnam: Challenges, opportunities and implication for policy changes

Dinh Xuan Tung1, Pham Duc Phuc2, Le Thi Phuong Hong3, Nguyen Mai Huong4, Tran Thi Tuyet Hanh2, Tran Minh Hang2, Nguyen Viet Hung4

1 National Institute of Animal Sciences (NIAS), Thuy Phuong, Bac Tu Liem, Hanoi
2 Center for Public Health and Ecosystem Research (CENPHER), Hanoi School of Public Health (HSPH), 138 Giang Vo, Ba Dinh, Hanoi.
3 Institute of Anthropology, 1 Lieu Gial, Ba Dinh, Hanoi
4 ILRI, Hanoi, Vietnam and Swiss TPH, Basel, Switzerland

Corresponding author and presenter: Dinh Xuan Tung
Email address: xuantung168@yahoo.com