Transforming Smallholder Chicken Production in Nigeria

African Chicken Genetic Gains - Nigeria

Federal Ministry of Science and Technology's Science, Technology and Innovation Expo 2017, Abuja, 3-7 April 2017
Smallholder chicken production system

It is characterized by **low input** (feed, health, housing, etc.) and **low output** (meat, eggs and ultimately income)

- Lay 50 – 60 eggs/year
- High mortality
Why chickens are kept by smallholders

Meat consumption: 41%
Ceremonies & festivals: 14%
Live adult chicken sale: 28%
Others: 12%
Egg consumption: 5%

Source: ACGG-NG Baseline Survey 2015
The Overarching Desire of SHC Farmers

To have birds that

Grow bigger

Lay more eggs

Have high survival rate
About ACGG-NG

ACGG is a platform for testing, delivering, and continuously improving tropically adapted chickens for productivity growth in sub-Saharan Africa.

ACGG-NG covers 5 states (Kwara, Rivers, Imo, Nasarawa and Kebbi), 30 local governments and 60 villages in Nigeria.
The Development of 5 Improved Tropically Adapted Breeds (iTABs)
The 6 Breeds and their Developers

ShikaBrown

National Animal Production Research Institute
The 6 Breeds and their Developers

FUNAAB Alpha
(composite)

Federal University of Agriculture, Abeokuta
The 6 Breeds and their Developers

Kuroiler
(Composite)

Kegg Farms, India
(obtained directly from Uganda)
The 6 Breeds and their Developers

Sasso
(Composite)

Sasso, France
(obtained directly from Tanzania)
The 6 Breeds and their Developers

Fulani
(Composite)
The 6 Breeds and their Developers

Noiler (Composite)
Hybrids have been restricted to commercial poultry production, but, these iTABs are deployed specifically for smallholder chicken production
FAO Poultry sectors 3 & 4 (smallholder chicken production system)

- Characterized by low input, but high yielding breeds raised under improved management conditions
### Performance of the 6 iTABs (cocks @ 20 weeks)

<table>
<thead>
<tr>
<th></th>
<th>Fulani</th>
<th>FUNAAB Alpha</th>
<th>ShikaBrown</th>
<th>Kuroiler</th>
<th>Sasso</th>
<th>Noiler</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Live weight (kg)</strong></td>
<td>1.3</td>
<td>2.1</td>
<td>1.7</td>
<td>2.9</td>
<td>3.0</td>
<td>2.6</td>
</tr>
<tr>
<td><strong>kg Feed/kg body weight</strong></td>
<td>8.5</td>
<td>5.2</td>
<td>7.0</td>
<td>4.6</td>
<td>5.4</td>
<td>5.7</td>
</tr>
<tr>
<td><strong>Protein (g/kg meat)</strong></td>
<td>114</td>
<td>269</td>
<td>158</td>
<td>320</td>
<td>348</td>
<td>213</td>
</tr>
<tr>
<td><strong>Fat (g/kg meat)</strong></td>
<td>11</td>
<td>29</td>
<td>15</td>
<td>35</td>
<td>42</td>
<td>15</td>
</tr>
</tbody>
</table>
### Performance of the 6 iTABs (hens)

<table>
<thead>
<tr>
<th></th>
<th>Fulani</th>
<th>FUNAAB Alpha</th>
<th>ShikaBrown</th>
<th>Kuroiler</th>
<th>Sasso</th>
<th>Noiler</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at 1st Egg (weeks)</td>
<td>18</td>
<td>17</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>17</td>
</tr>
<tr>
<td>Ave Egg Weight (g)</td>
<td>42</td>
<td>51</td>
<td>54</td>
<td>55</td>
<td>55</td>
<td>39 (at 1st month of lay)</td>
</tr>
<tr>
<td>No. of Eggs/Week (3rd month of lay)</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2 (2nd month of lay)</td>
</tr>
<tr>
<td>Chicks Hatched/100 Eggs</td>
<td>60</td>
<td>55</td>
<td>74</td>
<td>81</td>
<td>85</td>
<td>84</td>
</tr>
</tbody>
</table>
TECHNOLOGY

Applications in Genetics, Nutrition, Health and Management of the iTABs
Technology

**FeedMix App**: supplementary feed formulation with cheap, locally available feed ingredients using mobile feed application
Technology

Open Data Kit (ODK)
A mobile application deployed in data collection
The conservation of local genetic resources in a Gene Bank for further development of the breeds

NDI₂ Vaccine

A thermo-stable and thermo-tolerant vaccine used in the prevention of Newcastle Disease

Produced by the National Veterinary Research Institute.
Opportunities for private sector involvement include: hatcheries, breeding, inputs (e.g. feed), microfinancing, processing and marketing.
Industrial Linkage

Examples of private sector actors involved in the transformation of the SHC VC

Packaging for frozen and oven-dried chicken
(Bdellium Consult Limited, Lagos)

Chicken Egg powder
(Answer Industries Limited, Ijebu-Ode, Ogun State)
Efforts are directed towards food security, poverty alleviation, improved household income and livelihoods.
Development

Development

Women Empowerment

Poverty Alleviation

Nutrition
more productive chickens for Africa’s smallholders

http://africacgg.net