



**POSTER PRESENTED AT THE ALLIANCES WORKSHOP AT THE
IUCN WORLD CONSERVATION CONGRESS ENTITLED:**

**“FOLLOWING THE NATURE, WEALTH AND POWER TRINITY TO HEALTHY
ENVIRONMENTS AND HEALTHY PEOPLE”**

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Posters Presented By:

1. Peter Coppolillo, Wildlife Conservation Society – Chickens, nutrition and bushmeat in Tanzania.
2. Charles Foley, Wildlife Conservation Society – Conservation easements in Tanzania.
3. David Meyers, Madagascar Bamboo – Bamboo and carbon offsets in Madagascar.
4. Sharon Gordon, Millennium Development Goals Centre, East & Southern Africa - Using incentives for energy and resource management in Kenya

Panelists:

1. Lisa Naughton, Land Tenure Center, University of Wisconsin
2. Ann Koontz, Enterprise Works/Vita
3. Alice Ruwheza, Forest Trends
4. David Wilkie, Wildlife Conservation Society

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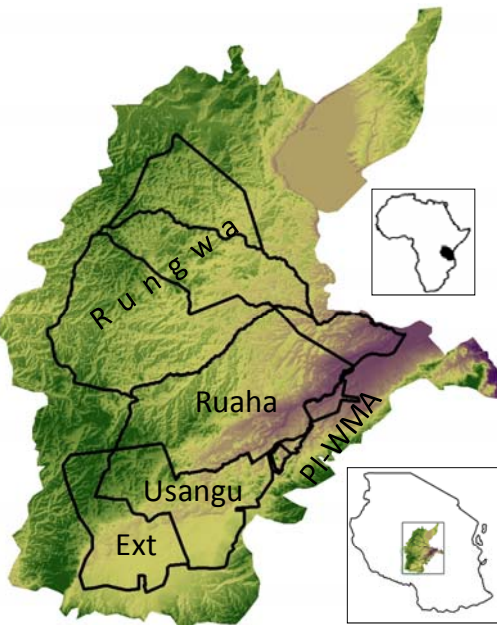
Promoting Transformation by Linking Nature, Wealth and Power

Protein substitution or supplementation?

Improving Poultry Production for Sustainability in the Ruaha Landscape, Tanzania

Context

Illegal hunting for wild meat (a.k.a. bushmeat) is a pervasive threat to natural and semi-natural landscapes around the world. Unsustainable hunting can disproportionately affect vulnerable and endangered species, undermine the economic value of natural ecosystems, and in some cases, limit species ecological



functions and lead to the breakdown of ecosystem services. Conservation programs often seek to provide domestic protein to local communities in hopes of alleviating pressure on exploited wild species. Here, we report on one such program and its relationships to village and household economics. Specifically, we examine the following questions:

- Do increases in village poultry production lead to greater protein availability and/or lower prices within project villages?
- Does increasing poultry production decrease the likelihood that households will use wild meat?
- Does increasing poultry productivity lead to greater food security?

Project Implementation

The Project was implemented in Iringa District of central Tanzania. The Iringa District Development Plan, which calls for increased poultry production in villages bordering Ruaha National Park, was the starting point for a collaboration between the Wildlife Conservation Society (WCS), the Iringa District Council (IDC) and Sokoine University of Agriculture (SUA). Chickens were vaccinated for Newcastle disease in eight of 21 villages in the Idodi and Pawaga Divisions of Iringa District. WCS assisted with logistics and implementation of the vaccinations using its community liaison program. This network allowed distribution of vaccines to each group of ten households (known as a “ten-cell” or balozi, the lowest level of administration in Tanzanian governance). Because chicken husbandry is traditionally women’s work and women capture chicken-marketing revenues, one woman from each ten-cell

was chosen to vaccinate her own household and the other nine within her area on nine subsequent days. This avoided large congregations of chickens, which could lead to trans-



mission of diseases. Vaccination of one household each day allowed more sanitary vaccinations (by cleaning and changing clothes between vaccination visits) and consequently minimized the potential for the vaccinator to act as a vector for disease transmission between household flocks.

Livelihood Issues

Poultry production was chosen as a livelihood improvement strategy because it has the potential to:

- Provide greater animal-source protein for nutritionally-stressed households;
- Generate income for women, who face a dearth of opportunities to market products and receive cash for household expenditures, children’s health care and education;
- Increase protein and cash avail-

ability throughout the year, most importantly outside the times when grains are harvested and cash is scarce;

- Accomplish the objectives outlined above without excessive labor burdens or financial barriers to entry.

Nature, Wealth and Power Linkages

Nature: Chicken vaccination did lower the price of chicken as more households in vaccination villages reported decreasing chicken prices than those than in non-vaccination villages ($p = 0.0517$). This demonstrates that chicken vaccination programs can lower prices and may be effective interventions to facilitate substitution of bushmeat with domestic meat.



However, lower prices by themselves may not be enough to promote a switch from wild to domestic meat. Vaccination households reported approximately the same frequencies of bushmeat consumption ($p=0.8145$), along with higher frequencies of eggs, pork, and fish ($p=0.0031$, 0.0056 and 0.0001 respectively). Interestingly, neither parents nor children ate more chicken in vaccination households, but households with fewer vaccinations reported missing meals (49.6 vs 61% $p=0.0037$), having no food in the household (22.8 vs 39.1% $p=0.0012$) or going to sleep hungry (24.4 vs 40.7% $p=0.0087$).

Taken together, these results suggest that egg consumption and fish and pork funded by chicken revenues are pathways by which increases in poultry productivity benefit household nutrition. In other words, improving chicken productivity supplements rather than substitutes bushmeat. High rates of food insecurity in the Ruaha Landscape suggest that most households' basic needs are not being met, and that households' nutrition must rise above this threshold before substitution can occur.

Wealth: Households receiving vaccinations reported having more chickens present at the time of the interview ($p = 0.0001$), and two and one half times more vaccination households reported increases in chicken sales over selling chicken over pre-vaccination ($p=0.0441$).

Power: More women in project villages were decision makers on when and how much livestock to market (35.9 vs 21.1% $p=0.0155$) and proportionally more women actually sold chickens in project villages (53.9 vs 39.7% , $p=0.0157$).

There was no difference in the gender roles surrounding chicken husbandry in vaccination vs. non-vaccination households, with women caring for chickens in vaccination and non-vaccination households (89.1 vs 87.3% respectively). Thus, men did not appear to take over the poultry production, as chickens became more valuable.

From the interventions and monitoring of outcomes described above we can make the following preliminary conclusions:

- Preference for bushmeat does not appear to drive consumption, but the roles of demand for bushmeat and suppliers' need

for cash in driving exploitation remain unclear.

- Vaccination programs for chickens can improve households' incomes and food security while increasing children's and adults' consumption of animal source protein;
- Increases in protein consumption are achieved through purchased domestic meat, rather than bushmeat or direct consumption of chickens;
- But it appears that improvements in poultry production do not immediately reduce bushmeat consumption when households' basic food security needs are not met.

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