VILLAGE POULTRY AND ITS ROLE IN RURAL AFRICA

Introduction
In Africa, 288 million people (24% of the world total) live below the poverty line, earning less than $1 a day and 216 million of these people (75% of the total number) live in the rural areas (IFAD, 2001). The World Bank estimated that 47% of the population of sub-Saharan Africa were living in extreme poverty by 1999 (UNDP, 2003). Some of the factors that are implicated for greater rural poverty include remoteness, lack of education, and lack of access to microfinance. One problem that is closely related to poverty is malnutrition, especially infant malnutrition, which is worst in Africa when compared to other regions. Data based on UNICEF and WHO estimates and reported by the UNDP in its millennium declaration reveals that the percentage of malnourished children (10%) in northern Africa remained unchanged between 1990 and 2000 while it reduced only from 32% to 30% in sub-Saharan Africa during the same period.

Scavenging village poultry are found in all the rural areas of Africa (Sonaiya, 1990a). They easily integrate into the main occupation (i.e., agriculture) of rural Africans. The rural poor are more likely to keep village poultry as compared with larger livestock (IFAD, 2001) because poultry require little in land space and other production factors. In Bangladesh where a large proportion of the rural people are landless and poor, village poultry has been used effectively to reduce poverty through the various projects that have used the Sem-Scavenging Smallholder Poultry Model. Alam (1997) showed that among the beneficiaries of one of such projects, the Smallholder Livestock Development Project, weekly income increased by 3.19 US$ and total savings by 27 US$; while at the same time consumption of eggs, chicken, meat, and milk also increased.

The objective of the governments in Africa that subscribed to the UNDP Millennium Declaration, is to halve the continent's poverty rate by 2025. Village poultry can make a vital contribution to the realization of this objective because it is the most abundant livestock in Africa and the livestock that is more likely to be available to the poor. This paper reviews the roles that village poultry plays in Africa.

Definition and characteristics of village poultry in Africa

Village (rural or family) poultry is defined as involving any genetic stock; improved or unimproved that is raised extensively or semi-intensively in relatively small number (usually less than 100 at any time). There is minimal investment on inputs with most of the inputs generated in the homestead; labour is not salaried but drawn from the family while production is geared essentially towards home consumption and use or savings (Sonaiya, 1990a). The term “family poultry” was adopted by the African Network for Rural Poultry Development (ANRPD) in 1997 because it is not location-bound as small flocks of poultry and especially chickens are raised extensively or semi-intensively in peri-urban and urban areas of Africa as well as in villages. The new name of the network is International Network for Family Poultry Development (INFDP).
Village poultry (VP) has played important roles in the economy of African countries. It is an important component of the family income, especially of women and children. In a survey in north-eastern Nigeria, Kushi et al (1998) found that 70.2% of the respondents kept chickens. In Kenya, 90% of the populace kept chickens (Mbogga, 1990), and in Malawi 95% (Kampani, 2000). Sonaiya (1990b) after reviewing all the country reports concluded that about 80% of the rural populace in Africa keep village poultry.

It is mainly chickens that are kept and thus VP is almost synonymous with chickens. Among the agro-pastoralists in northeastern Nigeria, 66% of the respondents in a survey kept chickens alone while 29% kept a mixture of chickens, ducks and guinea fowl (Ochere et al, 1990). Ayorinde (1990) reported that among the guinea fowl rearers in the northern middle belt of Nigeria, 94% also kept chickens along with guinea fowl. In Tanzania, the total poultry population of 28.3 million comprises 26.6 million chickens, while the combined total for ducks, guinea fowl and ducks is 1.7 million (Minga et al, 2000). Nyange (2000) estimated that 70% of VP in Kenya are the free range chickens; and in Uganda the scavenging chicken population is estimated to be 17 million or 80% of the total number of poultry. Table 1 shows the population of village chickens in various African countries.

Table 1: Estimated population of village chickens in some African countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Village chicken population (million)</th>
<th>% of the national flock which is village chicken</th>
<th>Year of publication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cameroon</td>
<td>11.2</td>
<td>70</td>
<td>1995</td>
</tr>
<tr>
<td>Central African Republic</td>
<td>2.2</td>
<td>80</td>
<td>1997</td>
</tr>
<tr>
<td>Cote d'Ivoire</td>
<td>15.4</td>
<td>73</td>
<td>1990</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>55.9</td>
<td>99</td>
<td>1995</td>
</tr>
<tr>
<td>Gambia</td>
<td>0.9</td>
<td>90</td>
<td>1990</td>
</tr>
<tr>
<td>Kenya</td>
<td>16.1</td>
<td>70</td>
<td>1992</td>
</tr>
<tr>
<td>Malawi</td>
<td>12.0</td>
<td>90</td>
<td>1990</td>
</tr>
<tr>
<td>Mali</td>
<td>18.0</td>
<td>90</td>
<td>1992</td>
</tr>
<tr>
<td>Niger</td>
<td>123.9</td>
<td>93</td>
<td>1992</td>
</tr>
<tr>
<td>Senegal</td>
<td>11.1</td>
<td>70</td>
<td>1997</td>
</tr>
<tr>
<td>Sudan</td>
<td>21.0</td>
<td>70</td>
<td>1990</td>
</tr>
<tr>
<td>Tanzania</td>
<td>21.0</td>
<td>75</td>
<td>1989</td>
</tr>
<tr>
<td>Togo</td>
<td>3.9</td>
<td>70</td>
<td>1984</td>
</tr>
<tr>
<td>Uganda</td>
<td>16.0</td>
<td>80</td>
<td>1992</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>8.9-10.7</td>
<td>25-30</td>
<td>1990</td>
</tr>
</tbody>
</table>

Source: Gièye, 2000

Women empowerment

In most African cultures, village poultry is the business of the women and children, these are the groups in the populace who have access to little or no factor of production (land and capital); hence it is a source of income for them. Williams (1990) reported that poor
widowed women produce chickens for sale and barter. Over 50% of the women in Uganda keep chickens on free range (Mukiibi-Mika et al, 2000). Village poultry requires low level of inputs, including land, and hence it is becoming more popular in areas where there is increasing pressure on the size of land ownership (Nyange, 2000).

Village poultry provide the means by which the poor and less privileged are able to empower themselves economically. Chickens are usually the first livestock to establish themselves in refugee camps, in resettlement camps or after natural disasters. The fact that women own a large proportion of VP emphasises its importance as a means of improving their livelihood.

Meat supply
Village poultry in Africa is characterized by low input and low output. The birds lay about 10-15 eggs per clutch and about 3 clutches in a year (Sonaiya et al, 1993), the hatchability is from 80% to 100% (Veluw 1987; Sonaiya and Olori, 1990) while survivability ranges from 10% to 80% (Veluw 1987; Atteh, 1990). Kabatange and Katule (1990) demonstrated the value of VP in meat production. They calculated that if a family has one hen as the foundation stock, and the hen laid 60 eggs in a year and has 50% hatchability, at the end of a five-year production period, there will have been a turn-out of meat that is far in excess of meat from a range fed cow which usually takes 5 – 7 years to reach slaughter.

Animal protein supply
For Africa, the estimated population of chickens in village poultry is 700 million, compared with 191 million for cattle, 182 million for goats, 158 millions for sheep and 15 millions for pigs (FAOSTAT, 2000). Because they are available in such a large number, they make notable contribution to the nutrition of the populace. The edible products of poultry (meat and egg) are always in high demand, they are generally widely accepted in virtually all cultures, and hence the level of consumption of poultry is very high. Although some cultures influence who in the family consumes the poultry products, they are nonetheless a cheap and ready source of meat and eggs for the family. The International Food Policy Research Institute forecasts that globally poultry will contribute about 40% of the total animal protein by 2015 (IFPRI, 2000). In Africa, VP becomes a source of meat when the chickens are slaughtered at festivals, during celebrations and, or sacrifices. Fresh eggs are seldom eaten, they are kept to be hatched, but unfertilized are harvested and eaten by the family.

Available data show that VP is contributing significantly to the supply of animal protein in Africa, especially in the rural areas. In Nigeria between 1977 and 1978 village poultry produced 41.3 million kg of meat (61% of the total poultry meat) and 49.5 million kg of eggs (19.5% of the total) (Akinwumi et al, 1979). More recently, Sonaiya and Olori (1990) estimated that village chickens produced 68.9% of the total poultry meat and 12.4% of the total eggs in the country. Andrewe (1990) found that the VP in Gambia contributed 22% of the total egg production and 70% of the total poultry meat. Danbra (1990) in his review showed that the total meat and egg supplies by VP in Côte D'Ivoire up to 1984 was 69% and 26% respectively. Mbugua (1990) reported for Kenya that
Although VP produced 71% of both the egg and poultry meat in the country only 10% and 40% of the egg and the meat, respectively, are marketed, the rest is presumably consumed in the family. In Tanzania, Boki (2000) reported that the total poultry meat and egg demand in the rural areas are met entirely by VP, while they supply 20% of the poultry meat and egg demands of the urban areas.

**An economic activity**

In most African countries, village poultry is not seen as a primary occupation, not even by the women. None of those surveyed by Sonaiya et al. (1993) using PRA technique in southwestern Nigeria viewed poultry as a main occupation. Nonetheless, it is a source of significant income in Africa. Ateh (1990) reported that in western middle belt of Nigeria 10.5% of VP keepers stated “source of income” as their sole objective of keeping the chicken, but 65.7% had “source of income” as part of their objectives.

Among the Yoruba people in southwestern Nigeria, women marketers (called Alarobo), who collect eggs from villagers keeping chickens and sell them in markets, earn their living through this means. From the export of eggs of guinea fowls alone, Quandaogo (1990) calculated that Burkina Faso earned about CFA 2 billion annually for the villagers. In Bauchi state of Nigeria, Kushi et al. (1998) reported that each of the 94 women VP owners they surveyed earned an average income equivalent to about US$3.00 monthly, this accounted for about 9.5% of the total monthly family income. In central Tanzania, Chitukuro and Foster (1997) calculated that VP flock comprising five adult chickens enabled women to earn US$38.00 annually, which is about 10% of the annual income.

The income generated from the village poultry benefits the entire family. Since VP is mainly the enterprise of the women, the proceeds spread directly or indirectly to all members of the family, as is used to pay the school fees of the children and to buy medicine, foodstuffs and other essential supplies for the family. Certainly, village poultry is making a very significant contribution to the health and economic well-being of families in Africa.

**The potential of village poultry in poverty eradication in Africa**

Because village poultry is present in such a large number all over Africa especially in the rural areas, it can be used as a tool in eradication of poverty, as a means of economic empowerment and a way of ensuring food security for rural families. As human populations grow, if village poultry is to achieve these goals, it must develop from its present low input-low output level to a higher level of output in a sustainable way. The requirements for this growth include development of appropriate simple technology for the husbandry of village poultry, improved management of the chickens, acquisition of appropriate skills by the village poultry producers, and a viable micro credit scheme for the VP “industry”.

**Technology development**

The available housing for VP expose them to accidents, predation and theft resulting in an annual loss estimated at 852 million birds (Sonaiya, 1990b). Simple predator...
Deterrents may be constructed to protect the chickens when sleeping during the night and when grazing during the day (Sonaiya, 2000).

Low-technology incubators such as the Chinese rice-husk incubator can be developed for village poultry producers in Africa. Such incubators will make possible production of day-old chicks within the locality of the VP producers. The advantages from such technology include generating self-employment for some VP producers in the rural areas; and reducing the down time for the hens which will result in greater egg production and hence increased income.

**Management – nutrition, health and integrated production**

Improvement in the feeding of village poultry will increase their productivity. Such feeding should be based on locally available (which may be unconventional to the intensive poultry system) feed resources. The assessment of the quantity and nutritive values of such feed resources has begun (Misharaf, 1990; Sonaiya, 1995) and is continuing. Economic use of these resources may require that not all the chickens be supplemented as well as the use of creep feeders which allows preferential access of chicks to supplemental feed and affords additional protection for the chicks against predators.

Sonaiya (1990b) pointed out that if the VP enterprise must thrive in Africa, the control of Newcastle disease is the number one priority. ND control programmes that allow VP owners to be trained in vaccine delivery become a means of economic empowerment for those VP owners who function in this capacity. The study of Sonaiya et al. (2002) showed that for greater productivity, vaccination against ND must be accompanied by improvement in other management practices such as supplementary feeding. This implies a holistic system approach to VP development.

While chickens are the main poultry in the villages of Africa, there are advantages in integrating other poultry species in VP production. In the savanna or dryland areas, where chickens are kept along with guinea fowls, there is a better usage of the scavengeable feed resource base as guinea fowls are better scavengers than chickens. The guinea fowls being more aggressive can also act as protectors of the chickens in that they are better able to fight off predators (Sonaiya, 1996). In the lowland areas, where rice-based farming systems predominate, ducks can be kept along with chickens. Ducks have better mothering ability than chickens and can utilize the rice paddies more effectively thus increasing the gains from scavenging system.

**Socio-economic**

There is need to shift the focus of VP production from simply increasing the number of chickens in the flock to profit maximization (Sonaiya, 1996). The flock size in FP in Africa more often than not exceeds the carrying capacity of the feed resource base leading to competition and heavy mortality. The VP owners need to learn the importance of flock size management including harvesting of excess egg for family consumption or sale and the sale of grower chickens rather than only the older chickens. If profit-
maximization becomes the focus, then other skills such as record keeping, egg grading and sorting, egg processing and marketing become important (Sonaiya, 1996).

**Village poultry development models**

The success of the Bangladesh smallholder semi-scavenging poultry model in poverty alleviation is noteworthy. The model consists of seven cadres which include the poultry workers (vaccinators), the chick rearers, key rearers, model rearers, mini-hatchery, feed seller and egg collectors. The cadres are made up of women that are very poor and landless. There is a record of economic empowerment of the women who participated in the model.

Reporting on the Bangladesh model, Ahmed (2000) identified some key elements that contributed to its success. These include: a step-by-step definition of the problem facing the poor and destitute; development of a local hybrid suitable for the scavenging system; control of diseases especially ND; periodic review of the breakthroughs and challenges encountered; and establishment of a strong collaboration between the governmental and non-governmental organizations (GO & NGO). After a detailed study of the Bangladesh model, Sonaiya (2001) came to the surprising conclusion that a major key to the success of the model was the provision of micro credit with interest and the accompanying financial discipline and introduction into the market economy it achieves for the poor women engaged in VP. Can this success of the model at effectively reducing poverty and being sustainable be reproduced in Africa?

Sonaiya (2003) described the Smallholder Family Poultry Concept for Poverty Alleviation in Nigeria (i.e. the SFP concept). The specific objectives of this program include increasing the income accruing to women through SFP; supply of a local high-yielding hybrid, control of common family poultry diseases (especially ND), and provision of micro-credit and technical services to SFP owners through GO and NGO. The program aims at the hard-core poor women who will initially be involved in the activities of four cadres: key rearers, poultry workers, feed mixer/seller and egg sellers. It is expected that from such activities, the annual income of the beneficiaries could be increased by up to 39 US$.

**Conclusion**

Village poultry is very important in Africa and provides a means of income to rural women and children who have little or no access to other factors of production. Hence, VP has the potential of being able to empower women economically and socially. With little or no improvement in its management, VP is making some contribution to family income in Africa. When sustained efforts have been made for their development, VP has shown the potential for increase productivity. With the introduction of technology appropriate for management of smallholder village poultry owners and micro credit with interest, the potential for poverty alleviation in Africa comes into focus.

Here are some excerpts of the electronic conference transaction.

Dr. Adam Traore, Bamako, Mali: “...from 10 newly hatched chicks, only 2-3 birds probably survive up to 6-8 months ... the average flock size in Mali ranges from 1-50 birds per household. Number of birds per household depends on production system adopted and the season in which surveys were carried out. The average flock size in Mali, Burkina Faso and Togo is about 15-20 birds per household. The PNPE Project in Togo disseminated information in order to improve the nutritional status of family poultry.

Datta Rangnekar and Sangeeta Rangnekar, Ahmedabad, India: “India is an example of rapid growth in poultry production in modern commercial sector. However, the commercial poultry has benefited only a small number of families who can take risks and provide high inputs. It is a good example of mass production as against production by masses. Commercial poultry has very high dependence on external inputs and is not suited for rural areas and small farmers.”

Dr. Ed. Wetli, Pietermaritzburg, RSA: “...important [to] develop appropriate training courses for small [scale] poultry producers. There is a Links Programme among some Australian and South African universities and for one of the projects a specific curriculum was developed for teaching about small scale poultry.

Prof O B Smith, IDRC, Ottawa, Canada: “...I suggest we identify owners whose primary objective is income generation and concentrate our efforts on these and these alone. Our chances of succeeding will be greater...” “...should we as researchers continue to focus on breed improvement as one of our options, or should we concentrate on how to ensure that our indigenous breeds express and reach their maximum genetic potential through good feeding and adequate health care?”

Dr. Roger Oakley, Reading, UK: “The FAO’s Emergency Assistance for the Control of Newcastle Disease (TCP/ZIM/8821) 1998 suggests that the majority of scavenger-based backyard producers in Zimbabwe (average flock size of 20 mixed-age birds) operate a production system designed to be “low input” and “low output” (Oakley, 1998). These producers are primarily crop farmers while some also raise other animals invariable on a larger scale than their poultry production. One of the primary roles of these flocks is to provide readily accessible meat and eggs for household consumption, very often for social occasions and cultural events. In this sense, the scavenging flocks are not designated as direct income-generating activities and to view them such is to misinterpret the objectives of producers. “Management of these birds is the responsibility of women and children. Both are constrained not only by the absolute level of other household and farming activities, but also by the timing of these activities especially food preparation, child care and schooling. Poultry-related activities can conflict with these other responsibilities. It is therefore vital that backyard poultry systems are carefully classified in order that any intervention is appropriate and compatible with the priorities and interests of individual producers.”
Dr. Asifo Ajuah Aafua, Sanaa: - “the role of research is to work ... with a proper understanding of the socio-economic, culture and tradition of the rural people”

Prof Ideris Ani, Malaysia - “...unless ND is effectively controlled, all efforts to increase production of village chickens will be wasted ...”

Prof Saka Baba, Mi duguri, Nigeria - “...By achieving a sustainable control of ND among scavengers poultry population, 40-50% of the goal of improving the productivity of this group of birds would have been realized”

Dr. Keith Hammoud, FAO Rome: - “...
1. What are the outcomes (even guesstimates) in output of chickens, meat, eggs (table columns), from implementing different improvements or combination of improvements (table rows)?
2. What specific opportunities are envisaged now and in the immediate future for each of these different improvements/combinations and what would be the expected gain in output of chickens, eggs, meat which could be sustained for each of these interventions at the smallholder unit level? What level of added input overtures would be required to realize and sustain each of these estimated gains, and is this input required once-off or repeated (continuing)?
3. What is the (guesstimated) current contribution to family income and well being of family poultry in the village?

Drs. Robyn Alders and Raul Fringe, Maputo, Mozambique - “Farmers whose only livestock is village poultry tend to be resource-poor and must therefore, be confident of making a return on any extra investment.”

Dr. E Z Mushi, Gaborone, Botswana: - “A typical flock in SADC countries comprises 5-30 birds (Anon, 1997).”

Dr. Achi Kitayi, Nairobi, Kenya - on Bessei 1987’s stepwise improvement:
Step 0 - traditional scavenging
Step 1 - water, supplementary feed, improved shelter, preferential treatment of chicks and ND vaccines
Step 2 - Step 1 + more improvement on housing and disease control
Step 3 - Step 2 + complete diet and improved breeds

<table>
<thead>
<tr>
<th>Animal Output</th>
<th>Traditional scavenging</th>
<th>Improved Traditional</th>
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<tr>
<td>Birds</td>
<td>Step 0: 2-3</td>
<td>Step 1: 4-8</td>
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<tr>
<td></td>
<td>Step 2: 10-12</td>
<td>Step 3: 25-30</td>
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<td>Total eggs</td>
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<tr>
<td></td>
<td>100</td>
<td>160-180</td>
</tr>
<tr>
<td>Egg for consumption or sale</td>
<td>0</td>
<td>10-20</td>
</tr>
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</table>

Dr. Jonathan Bell, Rabat, Morocco - “coccidiosis is a problem with commercial poultry, but not with village poultry. ...the general association between intensification and disease. The more intensive the production the more there is a risk of the spread of infectious
disease, and the more radical are the necessary medical and sanitary prophylactic measures. For village poultry, it is not known whether the more secondary disease are also present to the same degree but simply masked by more lethal disease, but it is possible that infectious agents such as reoviruses, for example, may be less prevalent in village poultry, where an unnatural degree of proximity does not occur, than in the intensively kept chicken.

Stephen Swan, Dhaka, Bangladesh: “In Bangladesh, the DLS recognized its limited resources to reach village family poultry units with veterinarians, and accepted that they should train village-based Poultry Workers (mainly women) associated with the Smallholder Poultry Semi-Scavenger Model which the DLS developed since 1983 with assistance from several donors (FAO/UNDP, Danida, IFAD, World Bank and AsDB). The Poultry Worker uses a syringe, and is often supplied with locally produced or imported vaccine through the DLS rural offices at sub-district levels. The Poultry Model is implemented through NGO’s working in close cooperation with the DLS, and micro-credit loan (about $40/household) have popularized the model which now reaches 1.3 million poor households and is planned to reach 2 million households over the next five years. The Model is an excellent example of GO-NGO cooperation.”

Dr. Adam Teraore, Bamako, Mali: “Can vaccination on a large scale be ensured by the existing public or private veterinary personnel, and at what cost?... The best approach is that some auxiliaries intervene in support and under the technical supervision of a (public or private) veterinarian. This is the approach adopted by the PNPE (i.e., Natural Small Animal Development Program) in Togo. The veterinarian in the zone participated in the training of the auxiliary and in their supply with veterinary products.”

Prof. P.B. Spradbrow, Queensland, Australia: “The most stable ND vaccines for use in village chickens. “The major impediment to village poultry production is ND. Conventional vaccines are unsuitable for sustained use because of cost, large dose presentation and their instability. The ACIAR has sponsored projects to develop thermostable vaccines more suited to use in village flocks. Vaccine strain V4 is now available as a commercial vaccine and strain 12 as seed materials that can be used for local production of vaccine. Thermostable vaccines are best delivered by eye drop but they can be given in drinking water or on suitable particles of food. These vaccines, suitable applied, have proved effective in many trials under laboratory conditions and in villages. Extensive use of these vaccines should allow the development of a new science of village poultry production. However, wider use of these vaccines will require further training on their production and use, and the adoption of suitable and probable novel, extension methods.”

Tadelle Dessie, Ethiopia: “In a survey conducted by Tadelle and Ogale (1996) in 3 villages in the highlands of Ethiopia, disease was cited as the most important problem reducing both number and productivity of the birds. Some families gave up rearing poultry because of an increase in disease problems after villagization (i.e., resettlement in villages) in 1984-86, because of the higher level of contact between birds in the more densely populated areas facilitated the spread of the disease from flock to flock.”
Dr. Jonathan Bell, Rabat, Morocco: —“It is of course normal that there should be an increase in disease in the chickens flock when nomads become sedentary and the birds are kept in close confinement. It is the same phenomenon that we see in the transition from village to intensive system of rearing. Parasites, Gumboro disease, mycoplasma and bacterial infections can complicate ND and form an infection by an avirulent strain like La Sota into a pathogenic infection. In general, ND is a very acute disease and the virulent strains that are prevalent in Africa are quite sufficient to kill all the chickens on their own.

Dr. Robyn Alders, Maputo, Mozambique: —“Regular out breaks of ND probably help to interrupt the cycle of other diseases. With the control of ND further research will be required to diagnose and rank other problems (diseases, nutrition, etc). Nutrition is clearly an area that requires more research, especially that of young chickens. Cost-efficient ways of providing supplementary feed to young chicks will almost certainly improve their survival rate and their response to vaccination.

Professor Peter Spradbrow: —“Examples of innovative extension methods are given by Dr. Robyn Alders in Mozambique with vaccination play and song. The song has been performed in Portuguese, Changaná, Nyanja, Sena and Micua. In Vietnam I suggested a version of the vaccination play for a puppet theatre as culturally appropriate in some Asian countries. Robyn Alders has suggested using the talking drums in West Africa. FAO at one time had a series of projection slides. Other suggestions are vaccination kites, vaccination dances. Below is the English translation of the vaccination song prepared by the Association of Mozambique Musicians:

Newcastle Disease

**Lyrics**

The chickens I'd bred have died from sickness
The ritual chicken is dead
The rough sheep* chicken is also dead
Even the one I borrowed from neighbours died

**Chorus:**

What should I do?
In this hunger season?
What to do folks?

**Dialogue:**

"Noooh. What. This is a bad omen to my ancestors"
"What's wrong neighbour?"
"See my chickens are dying"
"How did they die?"
"Well, I don't know. But they start like getting cold. Then they look like they are wearing a coat and sleepy, then die"
"That's a chicken disease called Newcastle"
"Bty me. I'm in deep trouble. What should I do?"
"Go to the Rural Extension. They will give you vaccine to apply in the eyes or in the water they drink. They won't die any longer"
"I see. But I don’t know the place"
"I will take you there"
"How kind. Let’s go"

* A term referring to chickens with the frizzled feather gene

Lyrics by Hortencio Langa and Wizzie Masuke
Arranged by Wizzie Masuke in Idioms: Xangan, Sena, Portuguese
Translated by Ali Faki in Macua

The recorded version features vocalists Hortencio Langa, Wizzie Masuke, Elidio Manica and Ali Faki and instrumentalists Hortencio Lenga, Celso Paco and Manuel de Jesus.

Dr. Jonathan Bell: — If there are birds in the flocks that are immunologically naïve with respect to ND, La Sota vaccine is a relatively virulent one to use. It could cause vaccinal reactions especially if there were concurrent mycoplasma and bacterial infections. This is all the more true in a village population which is necessarily a multi-aged one including young chicks. La Sota is not used for a first vaccination in industrial poultry. A village population could already have sufficient antibody levels to allow effective use of it, but you can’t be sure of this–there are situations when the chickens have no antibodies against NDV.

Dr. Christine Ahlers, Hannover, Germany: — “In 1995/96, a longitudinal survey on traditional poultry keeping system was carried out in Northern Malawi. Seventy one flocks with a total of 900 chickens in 4 villages were visited and examined monthly over a period of one year. Besides questionnaires on flock dynamics and productivity, blood and faecal samples were collected and single birds were checked for ecto-parasites. In one village, the birds were vaccinated against NDV. In the second village, recommendations on husbandry and management were given regularly and baskets were promoted for the rearing of young chicks to avoid high losses. In the third village all interventions were combined and chicken flocks in the 4th village served as control.

In July 1995, the average flock size was 17 chickens. Birds are kept mainly for consumption and sale, 90% of the families had a chicken meal less than once a month. Eggs were left for reproduction. Less than 50% of farmers sold a chicken during the survey. The losses from the flocks were about 4times as high as the offtake. In village 3, 2.2 chickens/flock were used (consumed, sold or bartered, given away as gift) monthly while the average flock size had increased to 26 birds after one year. In the control group, only 1.2 chickens were taken out per month and the average flock size consisted of 22 birds after 12 months of survey.

The results of this longitudinal survey revealed the importance of socio-economic aspects. For example, the popular custom of lending chickens to a relative or good friend can be devastating in disease outbreaks. Socio-cultural aspects influence vaccination campaign as well as acceptance adoption of recommendations. The acceptance of labour-intensive or expensive interventions depends on the importance and meaning of chickens to their owners.”

Dr. Jonathan Bell: — “For Newcastle disease control, a regional approach is necessary. To attempt eradication we need to consider a vaccine which permits monitoring of
vaccinal antibodies separately from antibodies to wild-type virus. This would permit detection of infected flocks in the presence of vaccination. The sort of vaccine that would be suitable would be a recombinant vaccine expressing only one of the two surface glycoproteins of NDV. The recombinant vaccine could be used in conjunction with two ELISA kits for sero-monitoring, one which would detect antibodies against the glycoprotein in the vaccine, and the other which would detect antibodies against the other glycoprotein which would only be present in the wild-type virus. For the ND vaccination campaign a name such as “Pan African Newcastle Immunization Campaign (PANIC)” is not so ambitious in its aim and has an acronym with a pleasing sense of urgency.

Prof Babafunso Sonaiya, INFPD – “This conference has provided beyond any reasonable doubt that we ought to move in the direction of obtaining hard data that can be used in explanation, prediction and planning policies and development projects.

We ought to focus our research on the following: housing, health and disease control, feed resources, marketing and product utilization, bird type and flock size. We need to ask what kind of housing to recommend for the extensive and semi-intensive systems. What is the appropriate stocking rate (0.1 m²/bird of Huchzer meyer, 1976)? What is the cost of housing (and health and feed improvement as well) to increased sales and consumption in the different management systems. Improved housing resulted in lower mortality in Gambia (19%) but what is responsible for the difference in mortality between Ethiopia (66%) and Tanzania (33%) where no improvement were made (Kitaly, 1998)?

In extensive systems, methods for estimating scavengable feed resource base are important. The existing methods of Gunaratne, Roberts et al are not exact but they really need not be as the SFRB is merely a guide to the provision of supplementary feed. The bird can balance its ration if cafeteria choice feeding is used. There is need to develop such feeding systems for scavenging birds of all species. The suggested modification of Ajuyah and the tabulation protocol of Kitaly for this modification should considerably improve accuracy of estimating SFRB but will be very difficult to carry out even under research conditions.

There is no disease-free system and surely we know that the intensive, all-in-all-out broiler systems still plagues by myriads of disease conditions with the appearance of new ones like SDS, ascites, etc. Scavenging is not a sufficient reason not to develop a health programme. The new free range systems must look for effective ways of delivering conventional and new types of vaccines that can be used in the unrestricted free range systems. The experiences from the IAEA/FAO coordinated research programme on vaccination strategy should be instructive. In addition, indigenous health remedies must be honestly studied and implemented as appropriate. Modern human and veterinary medicines started with concoctions and there are biological resources in the ecosystems of developing countries that have definitive medicinal properties.

Market research must accompany other developmental research but causes (be they social, cultural or economical) of low home consumptions of poultry products by the family producers themselves must be investigated and overcome.

Gender research is very important in family poultry but there are few gender experts with enough time or interest in family poultry research and development. Family
poultry researchers must acquire expertise in gender analysis and use such expertise in all their research.

References


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