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**CONTENTS**

Guest Editorial .....	2
A call from Dr. Peter Hunton, Past President of the WPSA! .....	2
Research Reports.....	2
Replica of indigenous fowl with market acceptability is a key factor in family poultry production.....	2
Improving the productivity of traditional scavenging poultry systems: constraints and solutions.....	2
Development Report .....	2
Family poultry and the highly pathogenic avian influenza (HPAI) in Cambodia.....	2
News .....	2
XXII World's Poultry Congress in Istanbul, Turkey.....	2
Invitation to the payment of membership fees.....	2
Foundation for Promoting Poultry Science .....	2
Publications .....	2
Small-scale Poultry Production: a technical guide .....	2
Success Story on the Control of Newcastle Disease in Village Chickens Using Thermotolerant Vaccines.....	2
The Potential of Free-ranging Poultry Development in Improving the Livelihoods and Food Security of Rural Households.....	2
Good practices in planning and management of integrated commercial poultry production in South Asia .....	2
International Diary .....	2
11th International Conference of the Association of Institutions for Tropical Veterinary Medicine & 16th Veterinary Association Malaysia Congress in Petaling Jaya, Malaysia .....	2
4th Workshop for Smallholder Poultry Projects in West Africa in Notsé, Togo.....	24
1st Nigeria International Poultry Summit in Ota, Ogun State, Nigeria.....	24
3rd International Poultry Conference in Hurghada, Egypt .....	24
XII European Poultry Conference in Verona, Italy .....	24
XXIII World's Poultry Congress in Brisbane, Australia.....	24

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## **Guest Editorial**

### **A call from Dr. Peter Hunton, Past President of the WPSA!**

All members of the INFPD are now invited to join the World's Poultry Science Association (WPSA) for the low fee of US\$10 per member per year. Members receive the World's Poultry Science Journal four times each year. Other benefits include eligibility for travel grants to attend WPSA events, reduced registration fees for many WPSA events, and access to a large network of potentially helpful people.

WPSA has more than 6,000 members worldwide and continues to grow, by forming new branches, mainly in developing countries. INFPD members residing in countries with WPSA Branches will become members

of the Branch and are encouraged to participate in local activities and events. Branches are eligible to receive financial assistance for holding meetings with invited speakers. Some Branches have newsletters that help bring members with common interests together.

The WPSA holds Congresses every four years, the most recent being the highly successful one in Istanbul, Turkey. One of the highlights was a Plenary Session devoted to the value of research and development in village and family poultry. Many submitted papers also dealt with different aspects of indigenous poultry in a wide variety of circumstances.

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## **Research Reports**

### **Replica of indigenous fowl with market acceptability is a key factor in family poultry production**

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[Paper first presented in a Seminar organized by the Soybean Association of America, 4 - 6 February 2004, Gohati, India]*

#### **ABSTRACT**

There is a worldwide acceptance for the use of family poultry as an initial step towards poverty alleviation. Hence, new varieties like crossbreeds Vanraja, Giriraja, Nirbheek and the synthetic Kalyani-DK are in meat group whereas Grampriya, Krishipriya, Krishna-J, Upkari and Hitkari in egg varieties. Meat varieties promise quick growth and egg crossbreeds 110-120 eggs under scavenger system of rearing. The replica of

indigenous fowls "Kalyani-DK" and the acceptability of 1.8 million birds in domestic meat market at the price of indigenous fowl is encouraging. Slogans like "double income in 40 days", "enter the world of tastier meat and egg" and "low input - high output" have created new horizons and market for smallholders in poultry production.

#### **WHY FAMILY POULTRY?**

Strategies outlined by the Development Assistance Committee (DAC) publication *Shaping the 21st Century: The Role of Development Cooperatives* (World Bank, 1998; pp. 9-14) have set the goal for reducing by half the proportion of people living in extreme poverty by 2015. Jensen and Dolberg (2002) have shown that there are evidences from many countries that smallholder poultry keeping, with adequate institutional support to the poorest rural women, is an important vocation to step out of poverty. It is also accepted that new ideas and new methodologies are to be developed. In India, about 360 million people are living below poverty line and about 260 million under extreme poverty and under protein hunger. In the world where more than one billion people are living in extreme poverty, there is consciousness to assist them to come out of this spiral of poverty.

Initiating the metamorphosis from the Red and Grey Jungle fowl under the forces of ecosystems and domestication had dispersed them throughout the world as numerous indigenous breeds, varieties, and non-descriptive types of various shapes, sizes, feather chromatism patterns and adoptive advantages under harsh rural ecosystem (Khan, 2003a). Consequently the average egg laying capacity is restricted to 30-60 eggs annually under scavenging husbandry system.

Indigenous fowls are raised in most of the villages by 90-95% of families in small groups of 5-15 birds (Khan, 1994a). Usually these small poultry holder families belong to the poorest section of the society. The ancestral poultry raising supplemented with new technologies for smallholdings may be considered as the first step towards poverty alleviation programme with two main objectives:

1. To supplement *Streedhan* to meet day-to-day needs of children and other vulnerable people towards better way of life; and
2. To prevent protein deficiency commonly seen in growing infants and pregnant women.

Khan (1983, 1994a, 2002) stressed the need to de-

velop prototype of indigenous fowl with the economic viable production profile and market acceptability independently for egg laying and indigenous fowl quality meat production. The present paper summarily reviews the efforts made in this direction to strengthen family poultry keeping, especially in India.

### SCENARIO OF CHICKEN AGRIBUSINESS

Chicken raising is universally accepted as income and employment generating large- and small-scale agribusiness. Apart from institutional and governmental support, the private sector throughout the world has

played a major role in making poultry a global concern. Figure 1 provides glimpse of the poultry activities limiting to the raw egg and meat production in India.

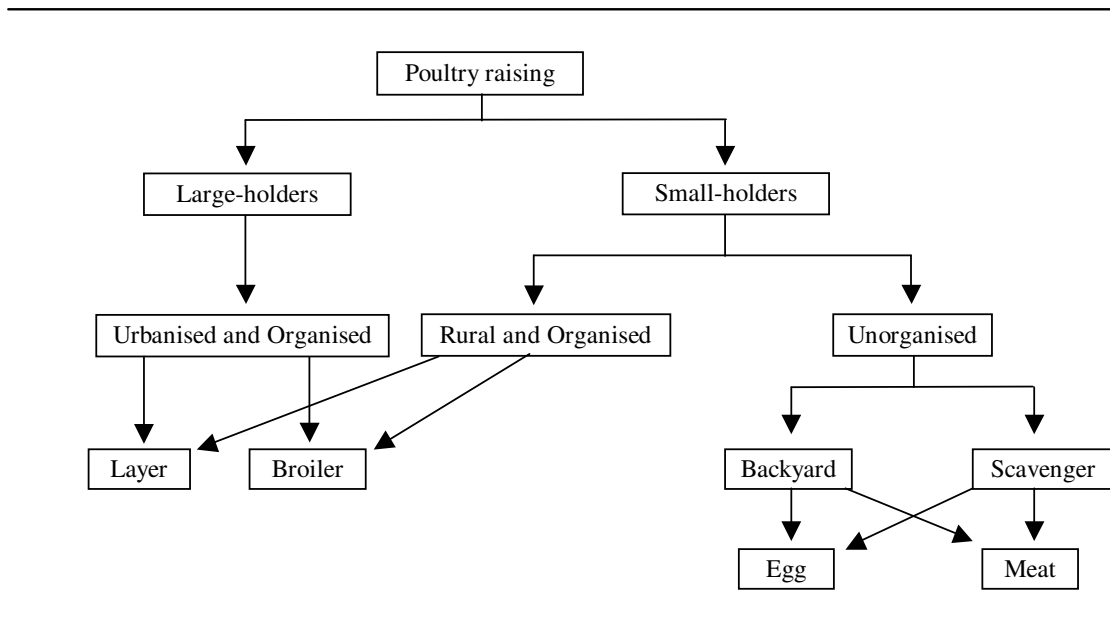


Figure 1: Classification of poultry keeping.

The organised sector in last 50 years have made the tremendous impact by raising egg consumption from few eggs to 48 eggs and meat from few grams to 1.8 kg per person annually. Consequently, it has generated employments. In addition, nutritional awareness has increased by highlighting the role of egg and chicken white meat in human diet. The unorganised sector, which is with the people below poverty line, is want-

ing serious attention to come out from the poverty spiral. About 5-10 percent of these Indian village families raise indigenous chickens in small units to meet the day-to-day needs. Sheldon (1998) stressed the need to readdress village poultry production with new ideas and technologies for people below poverty line to make it commercially attractive in future.

### PECULIARITIES OF SCAVENGER SYSTEM

Low input and low output system is the basis of scavenger poultry raising. The system ensures self-reproduction and mating, believes in natural survivability and high mortality rate in growing age, with least protection against disease hazards. A little modification in the system may assist to increase the level of generated income. Interesting data were presented by Jensen (1996), and Rajni and Narhari (2002). Au-

thors showed that a scavenging unit with indigenous fowl (60 eggs) with zero input is equally beneficial to improved variety (120 eggs) or small commercial layer farm (300 eggs). However, Khan (1994a) indicated that the replica of indigenous fowl with superior production profile laid more eggs and produced more meat than the indigenous fowl, under similar conditions of scavenging.

#### WHAT SHOULD WE KNOW?

Khan (2002), Jensen and Dolberg (2002) and Sonaiya (1992) outlined the basic elements which are prerequisite for successful adaptation of smallholder poultry as

the first step towards providing some financial assistance to the people below poverty line. Few points are outlined here.

##### A. Target group:

Women of the poorest families, widows and old family men, etc. Entire families are benefited more by women income - *Streedhan*. It is also known that, with socially equal status, women have naturally strong bondage.

##### B. Zero input - high output:

- Chicks/growers should be purchased from beneficiaries who have feeling of poultry ownership.
- It should be believed that the end product would be beneficial.
- Production cost should be lower than high laying variety (HYV).

##### C. No direct subsidy:

No direct financial subsidy is granted. However, indirect assistance to strengthen existing resources may be considered for financial assistance.

##### D. Enabling environment:

Vaccination and disease control services along with feed supplementation should be simple and affordable.

##### E. Meat type or dual purpose fowl as per market demand:

Local market needs will dictate the type of fowl to be raised.

- |                   |  |
|-------------------|--|
| HYV:              | Exotic/crossbreed for egg production.  |
| HYV + Local fowl: | For egg production and surplus for meat and hatching eggs.   |
| Dual purpose:     | Primarily for meat and can also be used for egg production.  |
| Meat purpose:     | Replica of indigenous fowl for the domestic meat market. Quick high returns with least input.                          |
| Egg purpose:      | Replica of indigenous fowl with greater survivability and more egg production under existing scavenger feed resources. |

The smallholder segment or family poultry keeping is easy, simple and benefiting to the way of life for people below poverty line. The ancestral approach of scavenger system of raising should be respected initially till these people themselves find out supplement-

ing way to raise their income adopting any segment of agri-occupation. It is experienced that once these people assimilate the outcome in the positive direction then they invest little initially, but once satisfied gradually increase their involvement even taking risks

with least fear. However, the performance differs depending on the prevailing ecosystem (Khan, 2001;

Singh, 2002).

### BANGLADESH MODEL

In Bangladesh, 78% of eggs and 86% of poultry meat are produced by smallholders under semi-scavenger system (Huque, 2002; Nuru Miah, 2002). The key of success is the advantage of country's cheap labour of both the sexes awaiting opportunities for the gainful employment. PROSHIKA is the largest agriculture and

livestock based voluntary development programme with its network of 180 developing centres, with 388,000 women and 38,500 men members. The model described in Figure 2 is used with minor modifications by PROSHIKA for their poultry activities.

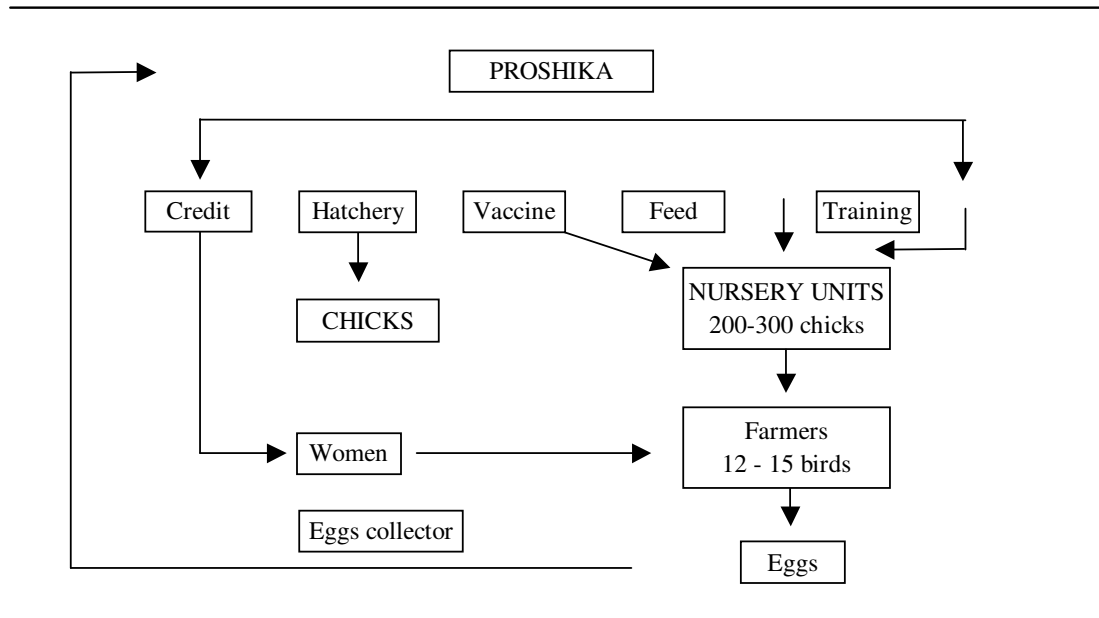


Figure 2: Bangladesh Model.

### IMPACT

Rahman and Hossain (1995) stated that about 200,000 new households are included in poultry work almost every year. The donor support of less than 100 US\$ per household is indirectly shared by the beneficiaries and used for the capacity building service facilities and human resource development. Impact survey initially showed that just in few years the beneficiaries living below poverty line reduced from 80 to 50%. However,

there were considerable movements of families in and out of the poverty level. The two-way movements resulted in overall poverty level in extremely poor decline from 31 to 23% and moderately poor stagnating around 29%. However, in time of catastrophe, smallholder poultry proves as an important tool in coping with poverty.

### EXPERIENCES IN OTHER COUNTRIES

Farrell (2002) was very critical on the long duration consequences and/or the end results of the Australian

assistance to various developing countries. However, other workers feel that everlasting impact is felt to-

ward awareness of the problem and poultry raising as bright ray in darkness. The experience of Botswana was less encouraging, and broiler was the bird used (Badubi and Ravindran, 2002). Similar end results were reported from the Philippines. In Zimbabwe, Maphosa *et al.* (2002) reported chick mortality of 70-

80% under scavenger system of raising. However, the use of mother units changes the scenario. Indian experience, under the mass poultry production using day-old cockerel chicks, was also not very encouraging due to lack of missionary planning.

#### WHAT ARE INDIA'S ATTEMPTS?

It is essential to accept the new strategy according to which the annual productivity can reach 110-120 eggs per hen under family poultry rearing conditions and available scavenger feed base. Low input and high output system under the current availability of resources could only be achieved through introducing fowl of high production profile and market acceptability. Attempts have been made in this direction since

independence. Exchange of eggs and cockerels as well as the existence backyard units are a few of such attempts. Main breeds introduced were Rhode Island Red (RIR) and its crosses with White Leghorn, Black Australorp or any other colour-feathered layer or broiler breeds. Few of these crossbreeds are now available on a commercial basis from the institutes that developed these varieties.

Table 1: Crossbreeds commercially available for family poultry rearing in India.

Name	Body weight 56 days (kg)*	Main trait	Institution
<u>Meat/Dual</u>			
Vanraja	1.6	Graded brown	Hyderabad
Giriraja	1.3 - 1.5	Brown, black and other	Banglore
CARI Nirbheek	1.3 - 1.7	Graded brown	Izatnagar
Kroiler	1.4	Graded brown	Kegg Delhi
<u>Egg type</u>			
Grampriya/Yamuna	0.6	Whitish brown	Hyderabad
Krishipriya	0.6	Brownish white	Kerala
Hitkari/Upkari	0.7	Frizzle/Naked neck	CARI Izatnagar
CARI Shyam	0.6	Kadakhnath cross	CARI Izatnagar
<u>Replica of indigenous fowl</u>			
Krishna J	0.5	Synthetic multi coloured	Jabalpur
Kalyani-DK	1.0	Synthetic multi feathered	Mumbai
Kalyani-SPK	0.6	Synthetic multi coloured	Mumbai

\* Body weight of average of sexes.

(i) Meat/Dual purpose:

Most of the above birds in meat groups are crosses among breeds and varieties. These are dominantly brown-feathered, and few have barring and black plumage. Giriraja and Vanraja are crossbreeds from slow growing broiler lines

(Khan, 2002; Ramappa, 2001). Kroiler is a crossbreed of low body weight broiler strain with Rhode Island Red (RIR) female line. These birds are disposed as coloured broilers in the meat market as per the rate of broilers, which is not usually as remunerative as indige-

nous fowl.

(ii) Egg layer:

The egg production hybrids are usually the crosses between White Leghorn and Rhode Island Red (RIR) breeds. Upkari and Hitkari are the crossbreeds between the frizzle, naked neck with the Dahlem Red lines. Commercial chicks are dominantly white in colour with black and brown feathers and further. Back cross to RIR imparts more brown feathers with leggy appearance and are recommended for rural family poultry raising (Singh, 2002). The maturity is very late and attains 1.0 kg live weight in more than 16 weeks of age. Thus, the economic suitability of these crossbreeds in the meat market is doubtful. Few of these have indigenous inheritance therefore may have adoptive advantages under rural harsh ecosystem. However, no such data is available in the literature.

(iii) Replica of indigenous fowl:

Hypothesis put forward by Khan (1983, 1994a) that the ideal bird for the introduction in the rural and tribal areas should have most of the phenotypic characters as that of the indigenous fowl, but with higher production profile. Few of these phenotypic characters are listed below:

- a Body size and its shape;
- b Feather chromatism;
- c Skin and shank colour;
- d Egg production up to 110-120 in 4-5 clutches with the brooding frequency at longer interval;
- e Indigenous type tastier meat.

Three synthetic chickens are available on the market. Krishna-J is for egg production, and surplus is sold as meat bird. It withstands feed scarcity and summer stress effectively (Singh *et al.*, 1980; Pandey, 1994; Khan, 1994b, 1998). It takes more than 16 weeks to

weigh 1.0 kg. Similarly, Kalyani-SPK is normal-bodied fowl with multi-coloured feather pattern. It is similar, in body shape and size, to the non-descriptive native fowl seen in the villages. It has excellent adoptive advantages under rural ecosystem but takes 11-12 weeks to reach 0.9 kg body weight and produced about 120 eggs within a year.

Kalyani-DK is specially synthesized for the indigenous fowl meat market. The multicolour feathered grower reaches 1.0 kg body weight in 56-60 days with the feed efficiency ratio (kg feed consumed/kg weight gain) of 2.4 to 2.6 (Anonymous, 2002). Under the conditions of large and organised farms it grows uniformly, with more than 95% viability. Khan (2002) presented few details of the Kalyani-DK at the 7th WPSA (World's Poultry Science Association) Asian Pacific Conference in Australia and also at the WPSA Zonal Conference in Bangladesh in the year 2003.

Kalyani-DK has been extensively tried in field conditions with the tribal communities and also by large farmers for the indigenous fowl urban meat market. About 1.8 million growers and chicks in last 23 months have been sold at the premium price. The growers at 1.0 - 1.2 kg body weight are sold at least Rs. 12 - 18 per kg live weight more than the other colour-feathered fowl and the broilers.

Khan developed a simple model specially with the objective to provide gainful part-time work to the women to generate additional income and to offer a protein source for the children, pregnant house wives, and elders of the family.

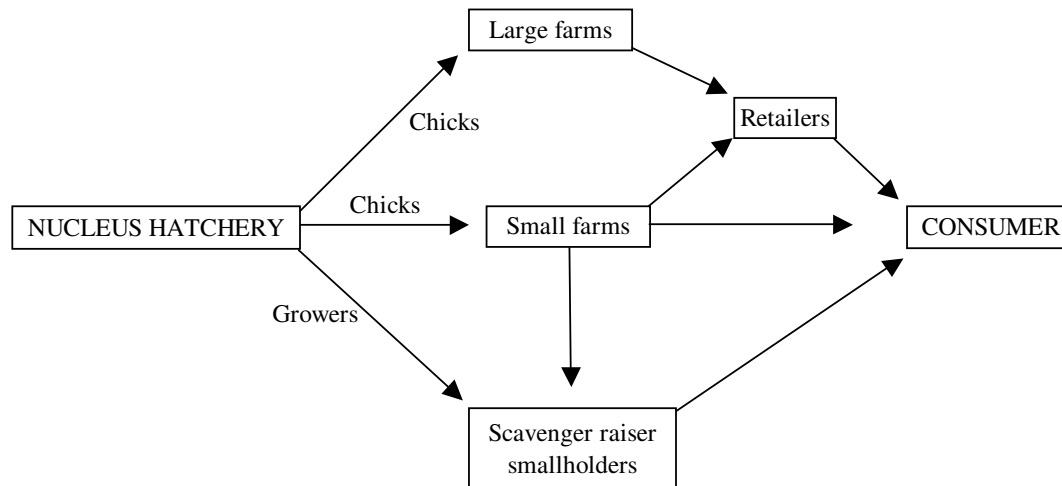


Figure 3: Khan's model of Kalyani-DK for indigenous fowl meat market.

Khan's model is under practice in the State of Maharashtra, especially in Thane and Usmanabad Districts (Khan, 2003b). The slogan is “*double your income in 40 days*” for the women smallholder poultry producers under the scavenger system of raising. The technology designed is of *low input high out*. The 2-year hard work is becoming popular with the women groups of the tribal communities specially supported by NGOs and other welfare organizations. Technically, growers of Kalyani-DK are purchased on cash payment by tribal women (without subsidy). At 40 days of age, each bird reached 0.8 - 1.0 kg body weight. These women groups arrange their own bird sale in the village market an/or locally at the cost double than the investment done in the purchase of grown-up chicks.

The following points were kept in mind:

- a. Poultry raising, in poor sections of the village society, is a part of complex system of crop, small-scale work and labour. Women, children and elderly people will become useful players in the household maintenance.

- b. High viability at the beneficiary door is a rewarding asset of Kalyani-DK and encourages poultry producers to repurchase chicks. The fall out is less than 13%. Interest of village youth to use this bird as a source of quick return was encouraged.
- c. Each woman get not more than 10 mixed sexed growers at a time. The average flock size is of 6-7 birds per family. This is an essential element in view of the scavenger feed base availability in the village.
- d. *World of tastier and lean meat* has attracted the urban consumers. Kalyani-DK has proved successful in these aspects.

The village women poultry groups automatically came into existence with the initiatives of NGOs. The concept of raising replica of indigenous fowl proposed by Khan (1983) by masses for ready meat market is unique approach. The bird being phenotypically similar to indigenous fowl in appearance, in terms of lean body shape, pink skin colour, feather multiple chromatism and dull bluish shank supported by lean tastier meat. These phenotypic traits have made it

easier to enter in the domestic meat market as indigenous fowl. The basic attraction is the consumers' acceptance to pay premium price for Kalyani-DK almost similar to that of indigenous fowl.

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### **Improving the productivity of traditional scavenging poultry systems: constraints and solutions**

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## 1. INTRODUCTION

A research project managed by the Scottish Agricultural College, and with socio-economic inputs from the Natural Resources Institute, has been investigating the production problems facing poultry keepers in two locations in rural India, and working with poultry keepers to address some of them. The project is funded by DFID's Livestock Production Programme. The locations, both semi-arid, are Udaipur District in Rajasthan and Trichy District in Tamil Nadu; and BAIF Development Research Foundation and Tamil Nadu University of Veterinary and Animal Sciences

are collaborators in the respective districts.

The two project locations are quite different as far as poultry keeping is concerned. In the Udaipur project, the local people are poor tribals, and there is no organised market for poultry. By contrast, in Trichy the poultry keepers belong to a range of castes and wealth categories. Chickens from this area are highly prized for their superior taste, and there is a well-developed market.

## 2. PROJECT METHODOLOGY

In its early stages (February-April 2001) the project undertook a structured baseline survey of 30 poultry

keepers in each location to obtain a general overview of practices and constraints (Conroy *et al.*, 2003). The

principal survey method was an interview schedule. In addition, to collect information about hatchability and mortality the survey used a new technique, which we have called the participatory clutch history method. This information was obtained by getting the owner to recall what had happened to one or more specific clutches in her/his flock during the previous 6-9 months, and to record this information on a chart. Since many poultry keepers are illiterate, the chart was based on symbols, rather than words and numerals.

After the survey, a one-year monitoring programme (from July 2001 to July 2002) was established in the two locations to collect further information about poultry production and productivity. In late 2002 and the first half of 2003 participatory trials were implemented in the Udaipur villages; and an on-station trial was carried out in Tamil Nadu. In 2004, the project's findings are being collated, and will be made available to poultry keepers and livestock practitioners through various media.

### 3. CONSTRAINTS

The baseline survey identified serious problems in both locations, and particularly in the Udaipur villages. The percentage of eggs spoiled was 18% in Trichy and 25% in Udaipur; and the mortality rates were 23 and 42% respectively (Table 1). In both loca-

tions, the survey data showed that, for the period under investigation, predation was a more important cause of mortality than diseases. Data from the monitoring programme subsequently confirmed that.

#### 3.1. Predation

In Trichy, predation mortality was attributed to wild birds. The main type of predator was large birds of prey (such as kites), while the second was small birds of prey. Crows were the third type of predator, but were involved much less frequently. In the Udaipur villages, it appears that by far the most important predator was the crow, which killed more chicks than all the other predators combined. The mongoose was also a significant predator, and wild cats were the third most important. Subsequent discussions with poultry keepers in Udaipur revealed further information about

predation, including the following:

- Only chicks are taken by crows, not older birds.
- Almost all predation occurs during daylight hours when chickens are outdoors.
- In the rainy season, mammals (mongoose, fox) kill more chickens than birds of prey do, because they are able to take advantage of the cover provided by the vegetation.
- In the dry season, birds of prey are able to take more chickens than mammals are, because of the lack of vegetative cover.

Table 1: Egg spoilage and mortality rates in the project villages.

	Trichy	Udaipur
	%	
Spoiled eggs	18.2	27.3
Mortality (pre-grower for Trichy birds; during first 6 months for Udaipur birds), of which*:	23.1	41.9
– Diseases	7.0	16.6
– Predation	14.7	21.9

– Accident and others	1.3	3.5
Total losses** <sup>a</sup>	41.3	69.2

\*Discrepancies between total mortality rates and the sum of the components are due to rounding up of decimal figures.

\*\* i.e. spoiled eggs plus mortality.

<sup>a</sup> the spoilage and mortality data are not strictly summable – they are not a percentage of 100. They have been aggregated here simply to give an overall picture of the severity of the losses, to facilitate comparisons between each group or village.

### 3.2. Diseases

Avian diseases found in the Tamil Nadu project area included: Newcastle disease (ND), fowl pox and fowl cholera. In the three Udaipur project villages, there have been no outbreaks of ND during the three years that the project has been working there. Worm counts

have shown gastro-intestinal parasites to be present in a large proportion of the birds in both locations. Although this does not usually kill the birds, it can weaken them significantly, making them more susceptible to death by other causes.

## 4. INTERVENTIONS

The project has been investigating ways of addressing some of the problems identified through the baseline

survey and the monitoring programme.

### 4.1. Hatchability

The failure of 25-30% of eggs laid in the Udaipur villages to produce chicks could be due to the eggs not being fertilised, the embryo dying during embryogenesis or to the egg being contaminated with bacteria. In the summer (dry) season, excessive heat (causing death of the embryo) appears to be an additional factor. Eggs that are sterile, or in which the embryo has died before the egg is incubated, can be consumed or sold, but villagers were unable to distinguish them from fertilised eggs. The project has, therefore, developed and tested a cheap battery-operated ‘candling’ technology that enables them to do so.

were infertile (or contained an early dead embryo). Of the eggs that did not hatch, candling identified 50% of the eggs as having cracked shells.

During the summer months, high temperatures can spoil eggs. Thus, the project has been testing another simple technology, based on locally available materials, that has the potential to reduce and stabilise the temperature of eggs. This is a half-moon shaped iron bowl in which the eggs are kept cool by evaporative cooling. The bowl is filled with an earth/sand mixture that is kept moistened with water. After this, a piece of jute bag is placed on the sand, the eggs are placed on the bag, and a cotton cloth or woven basket is placed over them. The bowl is suspended from the roof supports, or placed on a shelf or ledge, inside a family building. When the hen stops laying, all the eggs are placed under her, as per existing traditional practice.

In one project village in Rajasthan, 10 poultry keepers were selected and were given training in identifying infertile and fertile eggs using this technology (Sparks *et al.*, 2004). To monitor the efficacy of the procedure, the eggs identified as fertile or infertile after candling were marked with different colours then incubated.

The majority of the eggs laid were fertile, but 28%

The project conducted a trial in February-May 2003

with two groups of poultry keepers to test this technology, in which all eggs were candled first to confirm fertility. The cooled storage treatment resulted in 95% of fertile eggs hatching compared with the control

#### *4.2. Predation*

The project has only been able to do a limited amount of work on this constraint, and much more needs to be done. Some indigenous knowledge about predation control has been collected. Ideas suggested by farmers

#### *4.3. Diseases*

The project is investigating the effect of locally available plant materials (particularly those with a high tannin content) on the worm burden of the birds. In Udaipur, the grains of a plant that grows naturally

treatment where only 69% of fertile eggs hatched. There are plans to repeat the trial in 2004 with larger numbers of poultry keepers, chickens and eggs; and to extend it into June, which is usually the hottest month.

included: keeping some thorny branches in the yard to provide cover for chicks against crows; and destroying mongoose burrows in the vicinity of the house or village.

there are being tested; and in Tamil Nadu the results of an on-station trial suggest that high tannin sorghum grain may be effective.

## 5. DISCUSSION

### *5.1. Significance and implications of different constraints*

This project has highlighted the importance of certain constraints that merit greater attention from poultry researchers and development organisations than they have received to date, notably poor hatchability rates and high levels of predation-induced mortality. The cause of the high incidence of cracked shells is not known. When the shell is cracked, this makes it unlikely that the embryo will survive the incubation process. So further research on this topic would be desirable. Possible causes include: poor handling of the eggs by the owner; too many eggs, and/or eggs inadequately cushioned in the nest or collection container; the hen's claws coming into contact with weak shells (e.g. due to some nutrient deficiency or imbalance in the hen).

Given the importance of predation-induced mortality, predation prevention measures deserve more attention from poultry research and development professionals. Keeping birds in confinement is only one of several possible measures, and may be difficult for poor poultry keepers to implement on a sustainable basis.

ND is regarded by many poultry scientists as the main cause of mortality in scavenging chickens. This perception has not been confirmed by the project's experience (over a four-year period), suggesting that the importance of ND varies from location to location and may be overestimated in some instances. However, if ND was to occur every 2 or 3 years, in the absence of prior exposure or protective vaccination, it may kill more than 70% of the flock. Losses like this would be difficult to bear in a commercial unit or large flock, hence the tendency to vaccinate. The effects of sporadic losses due to ND on a traditional low-input scavenging system are difficult to quantify. Nevertheless, we would argue that over a period of say 10 years ND is unlikely to be the major constraint to production in the project locations, factors such as predation, poor hatchability and intestinal parasites having a greater impact. We recommend that similar studies to ours be undertaken in other countries and locations to collect empirical data on the relative importance of different constraints; and that, if the findings are similar, this

should be taken into account in research and development programmes targeting backyard poultry.

### 5.2. Poultry development interventions: models and sequencing

Our research suggests that there is plenty of scope for improving the traditional scavenging system with simple, low-cost technologies. We shall call this approach the '*Improved Scavenging Model*'. In Table 2 we speculate on the size of the improvements that might be achieved in low-productivity systems, such as those found in our Udaipur project villages. This suggests that: (a) the egg spoilage rate can be halved (through a combination of the hot season egg storage

technology discussed earlier, plus some research into the causes of cracked shells); (b) the egg consumption rate could be increased (due to candling); and (c) the predation-induced mortality rate could be halved. The small decrease postulated in disease-related mortality is based on the assumption that birds are being dewormed (possibly using locally available materials), another benefit of which would be faster growth.

Table 2: 'Guesstimates' of the potential for improving productivity and reducing egg wastage in an Udaipur-type situation.

	Without interventions	With interventions
		%
Chicks not hatching from fertile eggs (year round)	28	14
Mortality (during first 6 months), of which*:	42	30
– Diseases	17	16
– Predation	22	11
– Accident and others	3	3
Total losses** <sup>a</sup>	70	44
Eggs available for consumption	0	25

\* , \*\*, <sup>a</sup> see Table 1.

We believe that it would be easier to make these kinds of improvements to the scavenging system than to replace it with a semi-confined or confined system. Probably the best known of such systems is the '*Bangladesh model*', which has been promoted by DANIDA and implemented by various agencies in Bangladesh, such as the NGO BRAC (Dolberg, 2003). The *Bangladesh model* may produce substantially higher returns than the *Improved Scavenging Model*. The *Bangladesh model* however requires several more support components to be in place; and hence can only be implemented effectively where these conditions are satisfied or where strong support is available to create the conditions. The requisite components include: formation of village groups, the existence of a credit

and savings facility/system, input supply services (vaccine/medicine, feed, parent stock), breeders and hatcheries.

In many, if not most, developing country situations, creating the necessary conditions for a semi-intensive, semi-confined model will incur high costs. So if anything goes wrong the consequences could be more serious than they would be in scavenging systems. For example, the health risks increase in more intensified systems. Thus, if the vaccine programmes were to break down, this could result in mortality or morbidity that affects large numbers of birds. And, given the higher costs of this system, poultry keepers could find themselves in debt. High mortality rates have been a

problem in some projects promoting semi-intensive systems, and this can result in delinquency in credit repayments (Hajime Nabata, 1997). The International Fund for Agricultural Development (IFAD) has recommended, therefore, that production models “should not require a large initial investment” (*ibid*).

If the ‘*Improved Scavenging Model*’ was applied in Udaipur-type situations, characterised by high mortality and relatively poor hatchability, it would be sensi-

ble to begin any poultry development programme by addressing these problems, with measures requiring little, if any, cash (*Step 1*). Subsequently, ways of improving the marketing of birds could be identified (*Step 2*). Once effective market channels had been identified or established, interventions requiring higher expenditure or levels of organisation (e.g. supplementation using commercial feeds, ND vaccination) could be considered (*Step 3*).

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## Development Report

### **Family poultry and the highly pathogenic avian influenza (HPAI) in Cambodia**

[Source: *FAO AIDEnews - Issue no. 13, as of 27/04/2004: FAO field mission report - TCP/RAS/3004 21 Feb.–12 Mar. 04*]

Seventy five percent of poultry production in Cambodia is owned by subsistence farmers who keep an average of a dozen birds mainly for personal consumption but manage to sell 10-15 chickens per year to generate US\$ 15-20 income which can secure food stuffs for 6-8 weeks for a household of five. The majority of poultry are concentrated along cities on agriculture land, and adjacent to the Thai border in the north-west and the Vietnamese border in the south-east.

Prior to the diagnosis of avian influenza in Cambodia, infectious diseases of poultry included ND, fowl cholera, fowl pox, duck plague, infectious bronchitis and numerous parasitic diseases. Avian influenza was not included as a differential diagnosis of poultry pathologies, which likely delayed its initial detection and reporting (lack of disease awareness).

Evidence suggests that the highly pathogenic avian influenza (HPAI) did not become established in Cambodia to the extent that it did in Vietnam and Thailand.

This may be attributable in large part to the primarily extensive nature of the poultry industry [poultry density in Cambodia is much lower (less than 30 percent) than in Thailand and Vietnam] and the concomitant loss of consumer markets for chicken. Indeed, due to the crisis in neighbouring countries, the consumption of chicken dropped drastically as commercial broiler operations could not be restocked from Thailand due to the imposed importation ban. The combination of these two factors could therefore explain the relative limited spread of the disease in the country.

As of today, Cambodia has recorded a total of 12 outbreaks with the two latest cases occurring in north-eastern Kampong Cham and southern Takeo provinces, both which bordering Viet Nam. The first case of H5N1 was detected in Phnom Penh on January 23, 2004. Nevertheless, retrospective investigations established that HPAI was likely present there in early to mid December 2003. The epizootic disease swelled through January and died out by mid February 2004.

As a consequence of the lack of operational funds, less than 15 percent of the reported cases were investigated although the majority were confirmed by the Pasteur Institute. There was no epidemiological tracing conducted from confirmed premises and no systematic list of contiguous or related properties. It is therefore difficult to identify the origin of the infection in the country.

Current prevalence of the disease is also difficult to estimate since insufficient data exists to be able to define zones and determine the status of different areas. A comprehensive surveillance programme should therefore be implemented to determine the status of these areas. Furthermore, given the poultry husbandry practices, it may be impossible to secure separate geographic areas or disease-free zones. As a consequence, it may be more appropriate to aim for disease-free flock accreditation programs, particularly for commercial operators where biosecurity, timely diagnosis and reporting can be instituted.

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## News

### **XXII World's Poultry Congress in Istanbul, Turkey**

The XXII World's Poultry Congress (WPC) took place at the ICEC (Istanbul Convention and Exhibition Center) in Istanbul, Turkey, from 8 to 13 June 2004. The WPC was organized by the Turkish Branch of the World's Poultry Science Association (WPSA, <http://www.wpsa.com/>) with technical and financial support from companies, organizations and associations dealing with poultry production. More than 1500 persons from over 95 countries throughout the world attended this event. The scientific programme of the Congress was structured upon two plenary sessions and 41 concurrent sessions over three days. One plenary session and one session were entirely devoted to

family poultry. The plenary I, chaired by Dr Peter Hunton, was titled "Global Challenges and Benefits Related to Poultry Research and Development in the Third World." After introductory remarks given by the Chairman, nine papers were presented by distinguished scientists. This plenary session was attended by all speakers, and comments from the audience were very positive. In addition, there was a session chaired by Prof. E. Babafunso Sonaiya. This session was subdivided into three sub-sessions, namely

- Sub-session I - "Strategies and Objectives for Improving Family Poultry Production in Developing Countries."

- Sub-session II - “Development Projects of International, Governmental and Non-governmental Organisations.”
- Sub-session III - “Approaches and Results from International and National Agricultural Research Systems.”

During these sub-sessions, twenty papers covering various aspects of family poultry science (health and disease control, housing, feeding and nutrition, breeding, marketing, training and extension, credit, policies, planning, socio-economics, etc.) were presented. More than fifteen posters on family poultry were also displayed and discussed.

Apart from papers and posters, an exhibition stand was mount to highlight profit opportunities of the industrial poultry sub-sector in a sustainable development of family poultry. The exhibition consisted of various reading materials, such as publications, posters and pamphlets, showing major interventions in family poultry and their positive implications in the industrial poultry sub-sector. The stand was well attended, and congress participants took the opportunity to pay their fees to become INFPD member.

### **Invitation to the payment of membership fees**

As Global Working Group of World’s Poultry Science Association (WPSA, <http://www.wpsa.com/>), INFPD has numerous benefits but also many duties. We must all be proud of our integration into WPSA. All INFPD members who have not yet paid their membership fees are insistently invited to do it (i.e. US\$ 15 for each

It should be reported that the WPSA Board meeting was held the day before the WPC. At this meeting, INFPD representatives informed that our network, which is a Working Group of WPSA, will be concentrating its our efforts on collecting membership fees from prospective WPSA members. It has been proposed to utilise the existing communication tools (like the INFPD Newsletter, FAO website, and electronic mails) to share and disseminate information about the necessity to financially contribute. It was also mentioned that INFPD could eventually make requests to WPSA to facilitate this process.

Some INFPD members attended another meeting organised by the Asian Pacific Federation of WPSA, and it was decided to create a Working Group for the support of small-scale family poultry farming in this region. Collaboration will be developed, and members from both working groups (i.e. INFPD and small-scale family poultry farming) will meet at congresses and workshops to strengthen this collaboration. It is hoped that this new partnership will booster our efforts to promote our common field of interest.

person from developing countries). The US\$ 10 will be remitted to WPSA and US\$ 5 be kept as INFPD membership fee. The US\$ 5 will cover the subscription for the Newsletter and Directory and other benefits accruing to INFPD members.

The membership fee should be paid to our treasurer, Mr. Jens Christian Riise, at the following address:

*INFPD Treasurer*

*c/o Network for Smallholder Poultry Development,*

*The Royal Veterinary and Agricultural University,*

*Dyrlaagevej 2, DK 1870 Frederiksberg, Kobenhavn, Denmark*

*Phone: (+45) 35 28 37 61; Fax: (+45) 35 38 37 62; E-mail: <[riise@kvf.dk](mailto:riise@kvf.dk)> ou <[poultry@kvf.dk](mailto:poultry@kvf.dk)>*

*INFPD Newsletter Vol. 14, No. 1*

## **Foundation for Promoting Poultry Science**

[Source: *World's Poultry Science Journal*, Vol. 60, June 2004, p. 270]

The XIX World's Poultry Congress, held in September 1992 in Amsterdam, The Netherlands, was financially successful. This outcome was, to a large extent, due to the contributions received from the 16 main sponsors and over 2500 participants. The terms of reference of the Congress Organizing Foundation required that any credit balance that resulted after all liabilities had been met should be made available to the Dutch Branch of the World's Poultry Science Association (WPSA, <http://www.wpsa.com/>) as initiator of the organization of the Congress. As a result, a Foundation for Promoting Poultry Science (*Sichting Bevordering Pluimveewetenschappen*, in Dutch) was founded. The general objectives of this foundation are "to promote the developments and propagation of poultry science in WPSA-structures, and specifically:

1. the stimulation of international congresses and

the promotion of participation in these events, and

2. the support of initiative having the objective of establishing WPSA-branches in countries which do not yet have them".

Individuals and organizations may apply for financial support for appropriate WPSA activities such as conferences, congresses and symposia. Applications for financial support of conferences, congresses and symposia should be forwarded through the local WPSA Branch.

The Foundation has a particular interest in assisting in the process of establishing new WPSA branches and therefore supports these branches by covering for three years part of the membership fees.

Individuals or organizations may apply for financial assistance by contacting the Secretary of the Foundation: c/o Dr R.W.A.W. Mulder, Burgemeester Benkenlaan 6, 8162 CW Epe, The Netherlands, telephone +31 578 614072, fax +31 578 620950, e-mail: <[mulder.roel@wxs.nl](mailto:mulder.roel@wxs.nl)>

As the Board of directors of the Foundation meets about four times a year the applications should be received by the Secretary in good time.

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## **Publications**

### **Small-scale Poultry Production: a technical guide**

Keeping poultry makes a substantial contribution to household food security throughout in the developing world. They help diversify incomes as well as providing quality food, energy, fertilizer and a renewable asset in over 80 percent of rural households.

These producers are however constrained by poor

*INFPD Newsletter Vol. 14, No. 1*

access to markets, goods and services; weak institutions and a lack of skills, knowledge and appropriate technologies. The result is that both production and productivity remain well below potential and losses and wastage can be high. Adapted breeds, local feed resources and appropriate vaccines are however available, along with proven technologies that can substan-

tially improve productivity and income generation.

FAO recognizes the important contribution that poultry can make to poverty alleviation and has programmes that focus on small-scale, low-input, family-based poultry production. These programmes target the more vulnerable households especially those affected by natural disasters, HIV Aids and conflict. This manual provides a comprehensive and valuable technical guide for those in government service or aid agencies, wishing to embark on projects that exploit the potential of small-scale poultry production to improve the livelihoods of the rural poor.

FAO acknowledges and commends the effort that Prof. E.B. Sonaiya and S.E.J. Swan have put into making such a comprehensive and valuable reference for those involved in poultry production in the developing world. They wrote this valuable publication that

is a guide to sustainable domestic family poultry production. It provides a comprehensive review of all aspects of small-scale family poultry production in developing countries and it will help producers to produce in "technically correct" conditions. All aspects of small-scale poultry production are discussed in this book including feeding and nutrition, housing, general husbandry and flock health and general management.

Regional differences in production practices are described. The book will be of practical value to those planning to keep poultry and those who already keep poultry and need technical valuable references, as well as students, researchers and project development specialists. The French version is now available and we thank Dr. R.D.S. Branckaert, former FAO Animal Production Officer, who gave his contribution to the translation of this manual. The English version is under print and will come out soon.

Copies of the French version of this publication may be obtained from:

*Dr Emmanuelle Guerne Bleich, Animal Production Officer, AGAP/FAO, Rome, Italy*  
*Tel: 003906 570 56 660, Fax: 003906 570 55 749*  
*E-mail: <[Emmanuelle.GuerneBleich@fao.org](mailto:Emmanuelle.GuerneBleich@fao.org)>*

### **Success Story on the Control of Newcastle Disease in Village Chickens Using Thermotolerant Vaccines**

Since its inception in 1991, the Asia-Pacific Association of Agricultural Research Institutions (APAARI) has been disseminating information through various publications, CD-ROMs and websites on the successes achieved by the researchers in the National Agricultural Research Systems (NARS) of the region, in order to promote the transfer of proven technologies for their wider application. This effort is aimed to create synergy among the region's NARS in achieving their common goal of maintaining food security, improving economic prosperity and sustaining natural resources through appropriate agricultural technologies.

Raising chickens, pigs, ducks and livestock along with

agriculture and/or aquaculture is quite common in the Asia-Pacific region as millions of rural households traditionally practice integrated farming to minimize economic risk, ensure food security, and improve resource utilization through waste recycling. Poultry is an important source of protein in many of these countries, and unpredictable outbreaks of Newcastle Disease (ND) have been one of the major constraints to village poultry production in the past. While much has been written about ND prevention in the commercial sector, little information is available on its application in the rural household sector. Several international agencies, in cooperation with partner countries, are now engaged in developing suitable vaccines to pre-

vent this disease in village chickens. Since 1984, the Australian Centre for International Agricultural Research (ACIAR) has been supporting collaborative research, which ultimately resulted in the development of vaccines that are appropriate for chickens raised by rural households in varying climatic conditions.

This success story, written by Dr. Robyn Alders and published in August 2003, describes several vaccines and ND control programmes developed by ACIAR's collaborative research activities in the Asia-Pacific region. The case studies of the success story illustrate

implementation of ND control procedures and their impact on rural livelihood in a variety of socio-economic conditions. Several useful information resources, conferences, training programmes, and agencies involved in ND control research are also listed for interested readers.

I am sure this publication will prove to be a useful resource for not only poultry researchers and extension workers, but also for all those who are involved in traditional household poultry industry in the Asia-Pacific region.

Extract from the Foreword by  
R.S. Paroda, Executive Secretary, APAARI

Bangkok, Thailand  
September 2003

Copies of the booklet may be obtained from:

*The Executive Secretary, APAARI*  
*FAO-RAP, Maliwan Mansion, 39 Phra Atit Road, Bangkok 10200, Thailand, Fax: +66-2-6974408,*  
*E-mail: <[apaari@apaari.org](mailto:apaari@apaari.org)>*

### **The Potential of Free-ranging Poultry Development in Improving the Livelihoods and Food Security of Rural Households**

The publication is the proceedings of the 1st National Workshop on Indigenous Poultry Development held at the School of Agriculture and Agribusiness of the University of Natal in Pietermaritzburg, South Africa on 29-30 October 2003. The publication was edited by H.K. Swatson, I.V. Nsahlai, F. Dolberg, P.A. Iji and D. Umesiobi. The Workshop was organised by the research and consultancy firm, Nature and Development Group of Africa. The purpose of the event was to offer to participants the occasion to share their experi-

ences on rural poultry development and to come up with firm recommendations for an overall strategy for the South African Indigenous Poultry Network (SAIPNET). The workshop provided a forum for participants and distinguished resource persons to link together their efforts in interesting and informative discussions in relation to the use of family poultry production in poverty reduction. Hundred and sixteen persons attended this workshop, and 18 papers were presented along with recommendations.

Copies of this publication may be obtained from:

*Nature and Development Group of Africa (NGO Registration no. 026-851-NPO)*  
*Contact person: Dr. Harry K. Swatson*  
*25 Windsor Avenue, Pietermaritzburg 3201, South Africa*  
*INFPD Newsletter Vol. 14, No. 1*

Tel/Fax: (+27) 33 3456838; Mobile phone: 0721153754, 08239371719

E-mail: <[swatsonhk@yahoo.co.uk](mailto:swatsonhk@yahoo.co.uk)> or <[ndgafrica@telkomsa.net](mailto:ndgafrica@telkomsa.net)>

### **Good practices in planning and management of integrated commercial poultry production in South Asia**

Commercial poultry production in India is barely 40 years old although poultry raising dates back to pre-historic times. Hybrid egg strains were introduced into India in 1955 and broiler strains in 1961. The efficiency of modern poultry rearing was demonstrated in government farms, and the state agricultural universities in the country took the lead through their extension network in popularising modern poultry production in villages. Over the last thirty years there has been significant growth in poultry production in India (broiler population of 4 million in 1971 rising to 700 million in 2000).

A large share of this growth is attributed to the development of successful public-private sector partnerships. A previous study made by Tamil Nadu University of Veterinary and Animal Science (TANUVAS) in 2001 described in details the existing partnership between integrators providing inputs and the farmers raising poultry. It was found that the key-limiting factor for farmers in starting poultry production is access to credit, inputs and the marketing of their produce. There are advantages in broiler production under partnership arrangements or contract farming for both parties. Broiler farmers do not have to worry about market trends, their only investment is in provision of suitable housing. All other inputs are supplied by the 'integrator' (contractor) at his own cost, including veterinary services. For the integrator, mass production is developed and it is essential that it remains competitive in the market. It was noted that the type of

approach being applied in Tamil Nadu State might be of limited applicability in developing countries due to high-risk aversion of investors and lack of technical expertise. When considering these partnerships one must also bear in mind the highly visible trend towards control of broiler production by a few large-scale companies.

In 2002, the Food and Agriculture Organization of United Nations (FAO) commissioned again TANUVAS to write a book on the "*Good practices in planning and management of integrated commercial poultry production in South Asia*". The objective of this publication is to provide a comprehensive review of all aspects of poultry production in South Asia. It will help producers to produce in technically correct conditions. All aspects of poultry production (i.e. feeding and nutrition, housing, general husbandry and flock health), including layers production for eggs and broilers for meat, are discussed.

Regional specificity always exists but this type of production shows also many similarities in other parts of the world regarding potential and constraints. The book will be of practical value to those planning to keep poultry and those who already keep poultry and need technical valuable references, as well as students, researchers and project development specialists.

Copies of this publication may be obtained from:

*Dr Emmanuelle Guerne Bleich, Animal Production Officer, AGAP/FAO, Rome, Italy*

Tel: 003906 570 56 660, Fax: 003906 570 55 749

E-mail: <[Emmanuelle.GuerneBleich@fao.org](mailto:Emmanuelle.GuerneBleich@fao.org)>

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## **International Diary**

### **11th International Conference of the Association of Institutions for Tropical Veterinary Medicine & 16th Veterinary Association Malaysia Congress in Petaling Jaya, Malaysia**

The 11th International Conference of the Association of Institutions of Tropical Veterinary Medicine (AITVM), in conjunction with the 15th Veterinary Association Malaysia (VAM) Congress, will be held from 23 to 27 August 2004 at Sunway Lagoon Resort Hotel in Petaling Jaya, Malaysia. These events will be jointly organized by the AITVM, the VAM, the Department of Veterinary Services Malaysia and the Faculty of Veterinary Medicine, Universiti Putra Malaysia. The general theme of the Conference, which is “Animal Health: A Breakpoint in Economic Development?”, reflects the importance of animal health in the sustainable development of the animal industry. The focus will be on the improvement of human health and quality of life by means of increased and safe food production through the enhancement of research, training and education in veterinary medicine and livestock production (including family poultry production).

#### **OBJECTIVES OF THE CONFERENCE**

- To share and exchange knowledge and experience in various aspects of tropical veterinary medicine;
- To provide a forum for exchange and dissemination of information in the various fields of veterinary science and related professions; and
- To establish and strengthen relationship in professional development, education, and research through networking and collaboration of members and participants.

#### **IMPORTANT DEADLINES**

- Full paper: June 15, 2004
- Accommodation: June 15, 2004
- Registration: June 15, 2004

Detailed information relating to registration, accommodation, scientific and cultural programmes, exhibitions, etc. can be obtained from the Conference Secretariat at the following addresses:

- *Prof. Dr Sheikh Omar Abdul Rahman, Chairman Organizing Committee*  
*The Secretariat, 11th AITVM Conference/15th VAM Congress, Faculty of Veterinary Medicine, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, Malaysia, Tel: +603 89468314, Fax: +603 89488287,*  
*E-mail: <[sheikh@vet.upm.edu.my](mailto:sheikh@vet.upm.edu.my)>*
- *Assoc. Prof. Dr Fatimah Iskandar, Chairman Scientific Programme Committee*  
*11th AITVM Conference/15th VAM Congress, Faculty of Veterinary Medicine, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, Malaysia, Tel: +603 89468271, Fax: +603 89468333,*  
*E-mail: <[fatimah@vet.upm.edu.my](mailto:fatimah@vet.upm.edu.my)>*

For further information on the Conference, please visit the AITVM website:

<http://www.vet.upm.edu.my/AITVM-VAMconference> or contact [<caitvm@vet.upm.edu.my>](mailto:caitvm@vet.upm.edu.my)

#### 4th Workshop for Smallholder Poultry Projects in West Africa in Notsé, Togo

The 4th Workshop for Smallholder Poultry Projects in West Africa, with the general theme “Project Start and Exit Strategies”, will be held at the Hôtel le Berceau in Notsé, Togo, from 20 to 23 September 2004. This

workshop will be jointly organized by the *Vétérinaires Sans Frontières (VSF, or Veterinarians without Borders)* in Togo and the [Network for Smallholder Poultry Development](#) in Denmark.

#### OBJECTIVES OF THE WORKSHOP

The objectives of the workshop are to share recent experience from smallholder poultry projects in West Africa, to present new strategies and methods for initiating projects, and to discuss how to ensure sustainability and continuity of the project activities.

Secondly, the objective is to sustain and develop the collaboration between various persons and institutions directly involved in the implementation of smallholder poultry projects in West Africa and abroad.

#### RATIONALE

*Vétérinaires Sans Frontières (VSF)* and the Network for Smallholder Poultry Development have for some time been collaborating on the exchange of ideas and experience on smallholder poultry projects. In 2004, the Network made a study tour to Togo to monitor and evaluate the activities in the field. A French report is available through the Network, on request (E-mail: [poultry@kvl.dk](mailto:poultry@kvl.dk)). The three previous Danida-funded regional workshops on smallholder poultry projects were held in Senegal, 2001; Burkina Faso, 2002 and in Benin, 2003. The objective of the first workshop was to sensitise local CBOs on the problems involved in smallholder poultry and to share practical experience

from Senegal, Benin and Burkina Faso. The second workshop in Burkina Faso concentrated on the commercial strategies of the farmers involved in the projects, i.e. marketing of the products, purchase of necessary products, credit schemes, profitability, economic sustainability. The theme for the third workshop in Benin was to present strategies and new methods applied in the training of the extension workers and the farmers, and to discuss the sustainability of the extension service and the training.

The three workshops proved highly successful for the participants in sharing ideas and experiences concerning village poultry in the sub-region and abroad.

#### EXPECTED RESULTS

- Description of strategies and methods to implement and secure the sustainability of smallholder poultry production activities in West Africa and abroad;
- Identification of encountered problems and proposals for possible improvements;
- Recommendations on the planning, implementation and securing of sustainability of activities;
- Recommendations on sustainable strategies for the continuation of activities in relation to small-scale poultry farmers;
- Consolidation and planning for the continuation of smallholder poultry network in West Africa.

#### PREPARATIONS

All participants are asked to bring with them ideas and models implementation and strategies for sustainable

activities within smallholder poultry development.

Participants invited to give specific presentations are asked to prepare a brief presentation of no more than 20 minutes focusing on the strategies and methods for implementation and sustainability of smallholder poultry activities in their respective projects or countries.

The following questions should be addressed in each presentation:

- a. The methods and criteria behind the choice of the beneficiaries and their organisation;
- b. Methods and criteria behind the choice of the service providers (private veterinarians, micro-finance institutions, extension services, NGO's) and the organisation of these services;
- c. Management and organisation of the poultry activities;
- d. Strategies for securing sustainability in the activities:
  - How to secure sustainability of financial and veterinary services?
  - How to secure sustainability of production?
- e. What are the options of geographically expanding the activities?

Finally, the following overall questions should also be answered: What is working well, what could be improved and why?

Each presentation should be accompanied by a paper of maximum 10 pages (Times Roman, 12 point), including pictures, and references. The text should be submitted by e-mail to the organisers at the Network for Smallholder Poultry Development on <[lof@kvl.dk](mailto:lof@kvl.dk)> or <[riise@kvl.dk](mailto:riise@kvl.dk)> no later than 15 August 2004.

Final presentations may be prepared as flip-over, transparencies, MS-PowerPoint or any other suitable media.

The main working language will be French, with a few presentations in English. Translation into French will be provided for the presentations in English.

Further information relating to this regional workshop can be obtained from:

- *Jens Christian Riise\* and Lone Frederiksen\*\**  
*Network for Smallholder Poultry Development, Dyrslægevej 2, 1870 Frederiksberg C, Copenhagen, Denmark, Tel: +45 3528 3760/3765, Fax: +45 35283762, E-mail: \* <[riise@kvl.dk](mailto:riise@kvl.dk)> ; \*\* <[lof@kvl.dk](mailto:lof@kvl.dk)>, Website: <http://www.poultry.kvl.dk>*
- *Dr Charles E. Bebay, Vétérinaires sans Frontières (VSF) – Togo, B.P. 17, Tsévie, Togo,*  
*Tel: (+228) 3304503 (Office), (+228) 9058749 (Mobile phone), Fax: (+228) 3304576,*  
*E-mail: <[vsf.tg01@bibway.com](mailto:vsf.tg01@bibway.com)> or <[ceben\\_fr@yahoo.fr](mailto:ceben_fr@yahoo.fr)>*

### **1st Nigeria International Poultry Summit in Ota, Ogun State, Nigeria**

The 1st Nigeria International Poultry Summit (NIPS) will be held from 20 to 25 February 2005 at the Gateway Hotel in Ota, Ogun State, Nigeria. The general theme of this 1st NIPS, which has English as official language, is “The Emerging Opportunities for Poultry Production in West Africa”. The NIPS is planned to

be a bi-annual event of World's Poultry Science Association (Nigeria Branch) taking place in Nigeria, Africa and involving the meeting of all local, international experts and other stakeholders in poultry industry to exchange knowledge on the state of poultry industry worldwide, with special emphasis on Nigeria

and Africa. The NIPS vision is to establish and maintain continuously, a globally acclaimed data bank for Nigeria and other African nations' agro-industry, in order to enhance appropriate, sustainable and abun-

dant quality poultry output with an appropriate consumer-based market, viable in the dynamic and competitive global poultry industry.

#### SCIENTIFIC AND SOCIAL PROGRAMME

The scientific sessions have been planned to cover all the areas of poultry science. The scientific programme session includes (1) Poultry Genetics and Breeding; (2) Family Poultry and Waterfowl; (3) Nutrition, Feeds, Feeding and Physiology; (4) Poultry Health and Bio-security; (5) Technology and Poultry Management; (6) Poultry Products and Processing; and (7)

Poultry Finance and Insurance. Many renowned poultry scientists have been invited for plenary presentations.

The social programme for the NIPS is no less important. There is a very interesting package for accompanying delegates, and a truly traditional African cultural evening programme awaits all delegates.

#### CALL FOR PAPERS

You are encouraged to submit your scientific works and achievements for presentation during the scientific sessions. Abstract must be written in English no longer than one page A4. It must be sent with a pre-registration form to the summit secretariat or online as

an attachment to any of the following addresses: [<daisy@eruvbetine.com>](mailto:daisy@eruvbetine.com), [<first\\_nips@yahoo.com>](mailto:first_nips@yahoo.com), [<fanitunde\\_amos@yahoo.com>](mailto:fانيتunde_amos@yahoo.com), [<sola@oauife.edu.ng>](mailto:sola@oauife.edu.ng)

Please note the following important deadlines:

- Submission of abstracts: August 27, 2004
- Submission of invited papers: October 29, 2004
- Registration for the summit: November 29, 2004

Further detailed information can be obtained from:

#### SUMMIT SECRETARIAT

1ST NIPS C/o Obasanjo Farms, Ota - Owode - Idiroko Road, Ota, Ogun State, Nigeria, West Africa

P.M. Box 2240, Abeokuta, Nigeria

Tel: +234 803 4053 035, +234 803 3511 691, +234 804 2137 590, +234 804 3122 742, +234 803 3127 433, 01 774 4059, 01 794 7086

E-mail: [<first\\_nips@yahoo.com>](mailto:first_nips@yahoo.com), [<daisy@eruvbetine.com>](mailto:daisy@eruvbetine.com), [<sola@oauife.edu.ng>](mailto:sola@oauife.edu.ng), [<fanitunde\\_amos@yahoo.com>](mailto:fانيتunde_amos@yahoo.com), [<aofanimo@yahoo.co.uk>](mailto:aofanimo@yahoo.co.uk)

Website: <http://www.nipsng.com>

#### 3rd International Poultry Conference in Hurghada, Egypt

The 3rd International Poultry Conference will take place in Hurghada, Egypt, from 4 to 7 April 2005. This important scientific gathering will be organized by the Egyptian Poultry Science Association (EPSA),

in conjunction with the World's Poultry Science Association (WPSA) - Egyptian Branch. The Conference, which has English as official language, will be celebrating the silver anniversary of the EPSA. Con-

ference themes are as follows: (1) Breeding and genetics; (2) Nutrition and feeding; (3) Physiology and environment; (4) Marketing, advertising and technology; (5) Hygiene and disease; (6) Housing and equipments; (7) Husbandry and production; and (8) Small-holder farming systems.

#### CALL FOR PAPERS AND INSTRUCTIONS FOR AUTHORS

After abstract acceptance and paper submission, authors are kindly requested to send three copies and a hard copy on floppy or a CD of each paper, keeping in mind that a full paper should not be more than 8 pages long. The conference formal page should be in the following page set-up:

- Margins (Top: 4.25 cm; Bottom: 5.25 cm; Left: 4.00 cm; Right: 4.00 cm; Gutter: 0.00 cm; Header: 2.75 cm; Footer: 4.50 cm)
- Paper size: A4 (210 X 297 mm)
- Layout: Headers and footers
- Different first page

Please note the following important deadlines:

- Submission of abstracts (maximum 250 words): July 31, 2004
- Papers acceptance and notifying accepted authors: December 31, 2004
- Last registration for the Conference: December 31, 2004

More information about the Conference can be obtained from:

*Prof. Dr. M. Kosba, President of the WPSA – Egypt Branch  
Poultry Production Department, Faculty of Agriculture "El-Shatby", Alexandria University, Aflaton st., 21545  
Alexandria, Egypt  
Tel: (+20 10) 644 6339, E-mail: <[mkosba@hotmail.com](mailto:mkosba@hotmail.com)>*

#### **XII European Poultry Conference in Verona, Italy**

The XII European Poultry Conference (EPC) will be held at the Veronafiore Congress Center in Verona, Italy, from 10 to 14 September 2006. Since the first meeting in 1960 in Utrecht, The Netherlands, the EPC has served as an interactive forum for the fields related the poultry production as basic biology, breeding, genetics, nutrition, health, hygiene and pathology, husbandry, environment/pollution, animal welfare, product quality, processing technology and economics.

Keynote and state-of-the-art lectures, symposia, workshops, oral presentations, meet-the-expert and poster sessions will disseminate new information and stimulate discussion among colleagues from around the world. Detailed information about this Conference, which has English as official language, will be published in the next announcement.

For further details please contact the Organising Secretariat.

- On organisational matters:

*Secretariat XII WPSA European Poultry Conference, Verona Fiere, Viale del Lavoro 8, 37100 Verona, Italy,  
Phone: (+39) 045 8298111, Fax: (+39) 045 8298191, E-mail: <[epc2006@veronafiore.it](mailto:epc2006@veronafiore.it)>*

- On scientific matters:

*Secretariat XII WPSA European Poultry Conference, Department of Food Science, Via San Giacomo 9,  
40126 Bologna, Italy,*

Phone: (+39) 051 209 4221, Fax: (+39) 051 251936, E-mail: <[wpsa@alma.unibo.it](mailto:wpsa@alma.unibo.it)>

- Website: <http://www.epc2006.veronafiere.it>

### **XXIII World's Poultry Congress in Brisbane, Australia**

The XXIII World's Poultry Congress (WPC) will take place at the Brisbane Convention and Exhibition Center in Brisbane, Australia, from 10 to 15 August 2008. The technical programme will be structured around plenary sessions and concurrent symposia on a wide variety of topics with both invited and contributed papers. The programme will also incorporate poster sessions comprising a short oral platform for presenters to address the salient features of their posters. In addition, the programme will include mid-Congress technical tours to a variety of locations in South-East Queensland.

The scientific and technical program will be topical and relevant to the needs of the poultry industries in 2008. Speakers with expertise in identified areas of interest and importance to industry, science and technology will be invited to share their knowledge with delegates in both plenary and symposia sessions. Contributed papers will be critical to the success of the meeting, and the organizing committee is keen to receive submissions across a wide spectrum of activity relevant to the future development of poultry science and the poultry industries.

Further information relating to the participation, sponsorship or exhibition at the Congress can be obtained from:  
*WPC 2008*

*C/- Intermedia Convention & Event Management, P.O. Box 1280, Milton Queensland 4064, Australia*

*Tel: +61 (0)7 3858 5594, Facsimile: +61 (0)7 3858 5510, E-mail: <[wpc2008@im.com.au](mailto:wpc2008@im.com.au)>*

Detailed information about the congress is progressively made available on the website at:

<http://www.wpsa.info>