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Guest Editorial

Team work – the importance of working together

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[Dr. Robyn Alders has been working on family poultry since 1989, and has been an active member of the network since 1996. Her specialities are the control of Newcastle disease in village chickens and extension methodologies suitable for use in the family sub-sector. Robyn is currently based in Maputo, Mozambique, and is the Team Leader of the AusAID (Australian Agency for International Development) Southern Africa Newcastle Disease Control Project.]

Family poultry has been a part of rural life in most parts of the world for centuries. This suggests that traditional methods of poultry raising provide some benefits to farmers, otherwise the practice would have disappeared long ago. These methods are characteristically low output but the little that is produced is done for little or no input. Such a venture is relatively low risk because there is minimal investment in the enterprise.

Village poultry farmers, especially those whose only livestock is poultry, are generally amongst the poorer members of rural communities. Moreover, female-headed households often make up a significant percentage of the absolutely poor. When we invite farmers to adopt a new technology, we must be aware that there are usually costs involved, in terms of both money and time. Therefore, in order to ensure that the benefits of adoption outweigh the risks, it is essential that the new technology is thoroughly tested on-farm and preferably developed using participatory approaches.

Despite the good intentions of animal scientists (animal production specialists, veterinarians, etc.), we recognise that we have been trained to work with animals and not their owners. In order to better under-

stand the way farmers manage their assets and determine their priorities, we need the assistance of those trained to work with people, i.e. sociologists, social anthropologists, socio-economists and human geographers.

The benefits of a multidisciplinary approach have been noted for many years, but we still have difficulties implementing such an approach. In many cases, it is difficult to find social scientists who have worked with livestock. However, a lack of experience should not discourage us. If the person concerned is genuinely interested in the work and willing to spend quality time with farmers, then s/he will gain the necessary experience with the passage of time. In fact, having a sociologist with no preconceived ideas will often help to identify key areas that may have been overlooked by those of us who have been too focussed on our own areas of expertise.

With a thorough understanding of the local poultry production systems and how farmers make decisions, we will be in a better position to develop, together with farmers, approaches that will improve the productivity of their birds in a cost-efficient manner. Our village poultry team needs to have as its members

those who specialise in disease control, nutrition, appropriate housing, genetics, gender issues, extension, marketing, credit, cultural and social issues and village poultry production (i.e. farmer representatives).

Clearly not every group working with village poultry, in a particular country or region, will have all disciplines represented. This is where the INFPD has an important role to play. The INFPD newsletter and website provide channels that enable the sharing of information and experiences between groups working all over the world. E-mail contact between members facilitates the rapid exchange of information and helps us to learn lessons from those who have many years of

experience with research and development on family poultry. To enable the INFPD to do its job better, it is essential that members support the network and make results and experiences available for publication in the newsletter and for posting on the website.

To conclude, I would like to mention that the title for this editorial came to me while watching the Senegalese team play during the recent Football World Cup held in Korea/Japan. The players played as a team, not a group of individual stars, and their success demonstrated the value of such an approach. So, let us emulate the 'Senegalese Lions' and work together for the benefit of village poultry farmers worldwide.

Research & Development Contributions

World poultry meat production, trade and supply: Present and future

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[This is a shortened version of the section on world poultry meat production of a paper published in 'Poultry International' (October 2001, Vol. 40, No. 11, pp. 10-14). The first section on egg production has already been reprinted in the previous issue of this Newsletter (Vol. 11 No. 2). It is thought that data on world egg and poultry meat production may be of interest to our readers, in spite of the fact that figures relating to the family poultry sub-sector are not given specifically. – ED]

1. POULTRY MEAT PRODUCTION

Turning to the more vibrant poultry meat sector, which, according to FAO classifications, includes chicken, turkey, goose meat and other meats such as fowl and pigeon, it is important to remark that between 1961 and 2000 this agricultural sector recorded a spectacular evolution. Total world poultry meat production reached 66 million tons in 2000, more than 7 times the 1961 level. Consumption, or rather supply, in 2000 was about 10.8 kg *per capita* per year.

With the presence in Europe in 2000 of foot-and-mouth disease and BSE ('mad cow disease'), consumption of poultry is expected to rise. There is, however, real public concern for all types of meat and the market may not be as strong as some expect. The attitude of consumers may be a more important factor than disease. The supplies that are reaching the market to meet expected demand may push prices down and put pressure on the industry. Additional production is easily achieved: supply is very elastic and both Brazilian and Thai suppliers export to Europe to meet demand. In economic theory, this is like a hog cycle, with growth in demand resulting in decrease in prices.

In the year 2000, poultry meat quantities produced by developing countries were about 16 times more than their poultry meat production in 1961. On the other hand, developed countries increased their production about 5 fold. The evolution of poultry meat production is strongly correlated with the trend of chicken meat production. Turkey, duck, goose meat and other kinds of poultry meat represent only about 15% of total poultry meat production.

About 86% of poultry meat is chicken meat (Table 1) and this percentage has been more or less unchanged during the last 40 years, so the other poultry sectors are doing well, too. Last year, chicken meat output amounted to about 56.6 million MT. The United States of America, the European Union and China are, and will continue to be, the world's leading producers, accounting for more than half (56%) of the total world production.

Table 1: Total poultry meat production in the year 2000

Type of meat	'000 MT
Chicken meat	56 600
Duck meat	2 768
Goose meat	1 908
Turkey meat	4 745
Total poultry meat	66 039

Unlike egg production, developed countries dominated poultry meat production up to 1996. Starting with 1997, poultry meat production of developing countries exceeded poultry meat quantities produced by developed countries. In the year 2000, developing countries produced 3 million MT more than developed countries.

The trend of total poultry meat production was influenced by consumer behaviour, which has shown a very clear preference for poultry over other meats. Taking into account the period 1993-2000 (Table 2), the share of poultry meat in total world meat production increased by 4.4%. For example, in North America the share of poultry meat production has increased during the decade from 37% to 42%.

Table 2: Poultry meat production in 1993 and 2000

	Poultry meat production MT		Percentage of total meat production	
	1993	2000	1993	2000
Total World	192 054 481	231 996 181	24.9	28.5
Developed countries	100 859 121	104 978 460	26.3	30.2
Africa	1 324 771	1 323 756	29.0	34.1
Asia	6 100 477	5 140 090	28.8	30.2
Europe	54 898 281	51 934 468	19.3	22.0
North & Central America	34 034 742	41 633 613	38.8	42.2
Oceania	4 500 850	4 946 533	12.0	14.0
Developing countries	91 195 360	127 017 721	23.5	27.0
Africa	7 622 404	9 029 999	21.7	24.1
Asia	60 658 835	87 112 941	20.6	22.9
North & Central America	4 762 717	6 269 144	35.9	45.0
Oceania	103 868	119 611	13.0	13.7
South America	18 047 536	24 486 026	30.7	38.2

Given the strong world growth of poultry meat production, its share of the value of production of both poultry meat and eggs rose from 37% in 1961 to 53%

in 1991. The value of all poultry meat production surpassed the value of egg production for the first time

in 1984. Poultry meat now accounts for about 73% of the total of poultry and eggs: poultry has doubled in value relative to the base of poultry and eggs.

Throughout the 1990s, the fastest growth has been in the Far East and the Near East regions. In the Far East, egg production expanded 9.2% during the 1990s, while poultry meat production grew about 9.4% p.a. (per annum or per year). In the Near East, the respective growth rates were equal to about 5% for both eggs and poultry. In other words, these two regions had simultaneous growth rates of the two industries.

In many countries, however, investors have preferred to put funds into poultry rather than eggs. This has occurred mainly in developed countries. Of the developing countries, both China and India are the exceptions in that their egg markets have been growing rapidly.

During the past decade, egg production growth was nil in Europe, and 2.4% in North America and Oceania. On the other hand, poultry meat production grew at a positive but slow 1.4% p.a. in Europe and an impressive 4-5% in North America and Oceania. N.B.: Eggs are a single homogeneous commodity whereas poultry is branded: the two face very different elasticities of demand and cross elasticities. In the last decade the biggest poultry meat quantity was produced in 1995,

when the annual growth was more than 3.8 million MT. For 2000 the estimation figures show an annual growth of total world poultry meat production by only 1.4 million MT.

By regions, the highest share of poultry meat production (45%) was recorded in the developing countries from Central America. Below this world average share are Oceania, Europe and the developing countries from Asia. Between 1998 and 2000, poultry meat production increased in all regions with the exception of Europe where the trend was negative (-77,000 MT). In Latin America and the Caribbean, North America and the Far East, poultry meat production increased by more than 4.3 million MT.

An important contribution to the total world growth of poultry meat production was given by: China, Philippines, Indonesia, Mexico, Peru, Brazil, Myanmar, Vietnam and Dominican Republic. Five out of nine are Asian economies. In the year 2000, 55% of poultry meat output of developed countries was produced in North America; Western European countries contributed with 27% (Table 3). The majority of poultry meat production of developing countries (94% in 2000) was produced in countries from Asia (59%) and Latin America and the Caribbean (35%).

Table 3: World poultry meat production in the year 2000

Developed countries	%	Developing countries	%
Africa	1	Africa	6
Asia	5	Asia	59
Eastern Europe	6	North America	0
North America	55	Oceania	0
Oceania	2	Latin America & Caribbean	35
USSR, Former Area of	4		
Western Europe	27		

2. POULTRY MEAT IMPORTS AND EXPORTS

The total world poultry meat trade recorded more or less the same trend as production. The exports of poultry meat increased during the last decade by 35%, of which 34% was chicken meat. During the 1990s, world chicken meat trade grew very strongly, at 10%. In the year 1999 the total poultry meat exports accounted for 8 million MT of which chicken meat alone represented more than 6 million MT. There are, however, about 1¼ million MT of product which is counted twice – trade with Hong Kong is shipped on to China and the former USSR countries ship their products on to Russia.

The external poultry meat market is concentrated in few hands. In 1999, the quantities exported by the leading exporters (United States of America, France, Brazil, Hong Kong, Netherlands, China, Thailand,

Belgium and the United Kingdom) represented 91% of total poultry meat exports. The future will likely see a continuation of growth in production of poultry meat and its trade dominated, with few exceptions, by the United States of America, but production growth will be stronger in developed countries, where there will be market gains for eggs as consumption of the latter stagnates. There is, however, a limit to how much meat humans can consume so the U.S.A. has to export its product. In addition, the U.S. poultry industry faces strong internal competition from the pork industry, although not so much from beef. In 1999, the leading importers of fresh and frozen poultry meat were: Hong Kong, China, Japan, Germany, United Kingdom, Saudi Arabia, Mexico, Netherlands, Russian Federation and France.

3. POULTRY MEAT SUPPLY AND CONSUMPTION

During 1989-1998, poultry meat consumption increased by 2.8 kg/person/year. In 1998 the total world average was 10.1 kg/person. The regional distribution of poultry meat consumption shows that the biggest consumers are North and Central America (Table 4).

In 1998, each person in these countries consumed 35.1 kg. The lowest levels of poultry meat supply have been constantly recorded in Africa (3.7 kg/person in 1998) and Asia (5.9 kg/person in 1998).

Table 4: Regional supply of poultry meat

	World	Africa	Asia	Europe	North & Central America	Oceania	South America
	(kg/person/year)						
1989	7.3	3.2	3.2	15.1	27.5	18.6	11.0
1990	7.6	3.2	3.3	15.9	29.0	19.1	11.8
1991	7.9	3.2	3.7	15.8	30.3	19.1	13.3
1992	8.2	3.3	4.0	14.4	31.2	20.3	14.6
1993	8.5	3.2	4.4	14.1	32.0	20.8	15.4
1994	8.8	3.3	4.7	14.7	32.7	21.3	16.7
1995	9.4	3.5	5.2	15.0	32.8	21.5	19.3
1996	9.4	3.5	5.3	15.2	33.5	21.7	18.6

1997	9.9	3.7	5.7	15.5	34.4	22.0	20.4
1998	10.1	3.7	5.9	15.7	35.1	23.9	20.0

Per capita poultry meat consumption is expected to rise in all regions, except perhaps slightly in the U.S. World poultry meat production will exceed 94 million MT by 2015 against 66 million MT today (Table 5). China will be the source of the increase between now and 2015.

Table 5: Forecast of increasing of poultry meat production

	Production		Estimated growth production
	Average	Forecast	
	1995/97	2015	thousand MT
World	56 106.0	93 672.4	37 566.4
All developing countries	27 247.1	53 416.7	26 169.6
Sub-Saharan Africa	905.2	2 145.7	1 240.5
Latin America	8 836.9	15 624.6	6 787.7
Near East/North Africa	2 875.7	5 991.4	3 115.7
East Asia	13 588.0	25 832.9	12 244.9
South Asia	1 041.3	3 822.1	2 780.8
Developed countries	28 858.9	40 256.4	11 397.5

The next 15 years will likely see a continuation of growth in production and trade of poultry meat. The increase in production will continue to be broadly based across both developed and developing countries but with large increases in the developing world. In developed countries, poultry meat production will continue to increase. Major growth will be in USA (+5 million MT), Brazil (+1.3 million MT), India (+1.6 million MT), Mexico (+0.7 million MT), Iran (+0.7 million MT), Indonesia (+1.3 million MT) and Turkey (+0.5 million MT). Production growth is expected to be strong in Bangladesh, Pakistan, Nigeria and Guatemala. The big limitation on production growth will be feed prices.

Traditional exporters will continue supplying at current levels but it can count on Brazil (exports have doubled in the past 5 years and they will likely rise another 50% in the 14 years ahead) and USA becoming

more significant. So therefore the leading poultry exporters in 2015 will be both USA and Brazil (Latin America), followed by Europe (mostly intra-European trade), Thailand, Malaysia, Chile and India. Eastern Europe will become a strong exporter also with rapid export growth as some West Europe operations are moved East. South Africa will be viewed as an interesting market for the USA, Brazil and perhaps Thailand.

Countries which demonstrate potential (import markets) are mostly scattered throughout the developing world. They include Chile, Peru, Mexico, Pakistan, Iran, Indonesia, Philippines, Nigeria, Algeria and countries in Eastern Europe, as well as Japan. Japanese imports could double in the next 14 years. China and Thailand will probably cater to the Japanese market.

4. CONCLUSIONS

In the period 2000-15, the demand for eggs in the world is expected to grow by 1.9 percent with developing countries growth at 2.6 percent. In juxtaposition to this, the corresponding figures for the world poultry industry is 2.6% p.a. (with 3.5% p.a. for developing countries).

It should be remembered that the growth in egg and meat production all depends on the availability and price of feed. For years growing quantities of the world's food supplies have been processed into feed. About half of all cereals now are being fed to animals. This growth in feedstuffs for animals has shown up in large increases in imports into developing countries. It is one of the main factors behind the rapid increase in developing countries' net cereal imports. The general mechanism which drives the growth of the cereal feed sector can be simply stated: growth of incomes increases demand for livestock products; the latter causes production to rise, with the bulk of the additional production in most countries coming from the pig and poultry sectors. Unlike the case of ruminants in developing countries, substantial increases in pig and poultry depend heavily on the expansion of grain-fed production systems. [This general pattern would translate into the use of cereals as feed growing faster than the volume of livestock output. Moreover this pattern is

less pronounced or entirely absent in those countries with relatively high shares of cattle/sheep sector in the total growth of the livestock production as well as ample grassland and other non-grain feed resources.]

Feed is going to be the key consideration in future. Canada, India and Thailand are well placed in this regard. Iran and other Middle East countries, for example, are not well placed. In addition to that, food saturation and general over consumption will change consumption patterns.

Lastly, there is a move in the industry away from the marketing or exporting of whole birds to exporting portions and this will, over time, move into an even more sophisticated industry where the cooked product is exported. Already China is exporting cooked foods and meats to busy Japanese households. (Chicken kebabs could be traded rather than birds). This gives hope to developed countries – which have the technology – that by moving into the sophisticated end of the market they can export their poultry meat. This, of course, will have direct benefit to the returns on the home market.

A conceptual framework for using poultry as a tool in poverty alleviation

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[This is the introductory paper to the Second FAO/INFPD Electronic Conference on Family Poultry, which was run from 13th May to 6th July 2002. The theme of the electronic conference was "The Bangladesh Model and other Experiences in Family Poultry Development". All papers and comments are available on the Internet:

<http://www.fao.org/ag/aqa/e-conf/poultry/default.htm> – ED]

ABBREVIATIONS

AsDB	Asian Development Bank
DAC	Development Assistance Committee
Danida	Danish International Development Assistance
EU	European Union
HYV	High Yielding Variety
IFAD	International Fund for Agricultural Development
IMF	International Monetary Fund
NGO	Non-Government Organisation
OECD	Organisation for Economic Co-operation and Development
PRA	Participatory Rapid Assessment

ABSTRACT

Stimulated by work pioneered in Bangladesh, the paper outlines a conceptual framework for using poultry as a tool in poverty alleviation. There is now evidence from several countries that small poultry enterprises with adequate institutional support targeting the poorest rural women and their families can help them take the first step out of poverty. However, for the concept to work as a poverty breaking tool (i) the beneficiaries must come from the poorest segments of the village, (ii) the cost of producing an egg must be lower than in the commercial sector, (iii) an enabling environment must be established to keep a small flock of hens, inter alia, access in the village to feed, vaccine, vaccination services, micro-finance, marketing and other inputs and services, and (iv) the enabling

environment must contain institutional and political space to provide the people involved the possibilities and opportunities to take the next step out of poverty.

In conclusion it is noted that for this concept to remain an important tool in the fight against poverty, it is necessary to have a reliable tool to document the achieved results and have an institutional and political environment in which sharing of information is encouraged. One of the next steps in replication of the concept will be to institutionalise a paradigm, which encourages processes in which experiences are accumulated and disseminated. The involved staff must learn from mistakes and successes and build up a framework that facilitates training, education, and research.

Key words: Framework, paradigm, poultry, poverty, tool

1. INTRODUCTION

The title of this paper refers to a smallholder poultry development concept that implies small poultry enterprises targeting the rural poorest, who can take the first step out of poverty by using the concept. The concept is based on well-defined principles that can be used to develop a specific model within a particular area and these principles constitute the framework of the con-

cept.

The smallholder poultry development concept has been developed in a unique learning process in Bangladesh over a period of more than two decades. It is seldom that a development concept, in its basics, is maintained over such a long period and that lessons

learned in one project are incorporated in the succeeding project, especially when different donors are involved. It is also unique that the same stakeholders, and to a great extent the same persons, have been involved from the very formation of the concept till its present stages.

The Bangladesh smallholder poultry model has been analysed and described in several publications (Jensen, 1996 and 2000; Saleque and Mustafa, 1997; Saleque, 2000; Fattah, 2000; Ahmed, 2000; Dolberg, 2001). Furthermore, impact surveys have been conducted (Alam, 1997; Nielsen, 2000) and a number of subject-specific research papers have been produced such as on breeding (Amber, personal communication; Rahman *et al.*, 1997) and socio-economic aspects (Nielsen, 1997; Nielsen, 2001).

The smallholder poultry concept is in a process of being institutionalised through networks. The first network that was created was the International Network for Family Poultry Development supported by FAO (Sonaiya, 2000). With a limited budget, this network has contributed to information exchange with a focus mainly on African conditions. Later, the Network for Smallholder Poultry Development (www.poultry.kvl.dk) was established in Denmark.

2. ESSENTIALS

The smallholder poultry concept is currently being tailored to prevailing conditions in countries other than Bangladesh. In this process, it is important to have a clear understanding of the basic elements of the concept or the essentials, which are prerequisites for a successful adaptation. The five most important essentials are:

1. The *beneficiaries*, the target group, must be the *poorest* segment of the village population and in particular women;
2. The *comparative advantages* of village poultry

With financial support from Danida, this network has been able to address a number of issues related to project implementation support, education and institution building, and coordination of research. The network is committed to, among other things, support promotion and development of poultry projects in relation to Danida agricultural sector programmes. It may also be mentioned that the idea of setting up a regional training centre in Bangladesh has been launched and that an increasing number of research institutes take up an interest in smallholder rural poultry keeping. One example is the Sokoine University of Agriculture in Tanzania, which over the years has developed considerable capacity on smallholder poultry research.

The smallholder poultry development concept is in the process of being adapted in a number of countries such as Burkina Faso, Benin, Ghana, Eritrea, Malawi, Tanzania, Zimbabwe, Vietnam, Cambodia, Indonesia, and Nicaragua with donor support from Danida, EU, AsDB, IFAD, and the World Bank. In Malawi the adjustment has been through a successful pilot phase and is now in a stage of wider dissemination.

keeping must be sufficient to reduce the cost per egg produced to be less than that in commercial egg production;

3. The concept must comprise an *enabling environment*, i.e. all input supplies including micro-credit and services shall be timely available in the village;
4. The concept encompasses only the poultry component as *the first step out of poverty*, but the possibilities and the opportunities for the beneficiaries to take the next step must be built into

the enabling environment;

5. Quickest possible attainment of *institutional self-sufficiency* that is consistent with the overriding goal of poverty alleviation.

The rationales behind these essentials are:

Targeting poor women

A daily income of the value of one egg can have a substantial influence on a very poor family's livelihood while the impact on a better-off family will be minimal. Furthermore, experience shows that the entire family benefits more from an income belonging to a woman than an income belonging to a man (Sen, 1999).

Competition with the commercial sector

The smallholders cannot compete with the commercial sector on productivity, i.e. egg yield per hen, because the same management skills and the same production facilities are not available in the village. They can only compete on the input costs by taking advantage of the feed available free of cost in the surroundings; the scavenging feed resource base and other comparative advantages.

Enabling environment

The smallholders are shifting from a *no input/low output* system to a *small input/higher output* system. The latter implies a risk both on input cost and on investment. In order to minimise these risks, it is

important that inputs such as feed, improved quality of chickens, vaccine, medicine and services such as veterinary services, extension services and access to micro-credit are available within the village, when required.

Movement out of poverty

The poultry activity is to be considered as a learning process for the beneficiaries, but it has to be realised that one activity alone is not sufficient to lift a family out of poverty (Todd, 1999; Dolberg, 2001). The opportunities (the enabling environment) must be available and make it possible for the beneficiaries to establish a small poultry enterprise, to minimise the risks and to take the next step out of poverty by taking a new loan to another income-generating activity.

Sustainability - no subsidy at beneficiary level

The poorest women and their families in the villages with financial services and support to establish and maintain small income generating activities require a large amount of funds. The only realistic sources are donor funds, but these will only be available for a limited period to a specific project. Consequently, the concept must be based on donor support to establish the institutional capacity in a specific area to reach sufficient numbers of beneficiaries, and after that the beneficiaries' contribution shall be sufficient to cover the institutional operation cost. In this respect it is important that from the very beginning no subsidies are involved at beneficiary level.

3. VISIONS AND OPPORTUNITIES

More than a billion people live in extreme poverty (on less than US\$ 1 a day) and the pressing question is: how can development assistance be used most effectively to reduce global poverty?

The Development Assistance Committee (DAC) of OECD is the principle strategy setting institution of

the major bilateral donors. Some strategies are outlined in DAC's publication *Shaping the 21st century: The role of Development Cooperation* (World Bank, 1998, pp. 9-14). Some of the goals set forth by the donor community are:

- Reducing by half the proportions of people living in extreme poverty by 2015;

- Making progress toward equality of the sexes and the empowerment of women by eliminating disparities in primary and secondary education by 2005;
- Implementing national strategies for sustainable development in all countries by 2005 to ensure losses of environmental resources are reversed both nationally and globally by 2015.

These goals point to a different role for aid, which is more about supporting good institutions and policies than providing capital. Money is important, of course, but effective aid should bring a package of finance and ideas - and one of the keys is finding the right combination of the two to address different situations and problems. (World Bank, 1998, p. 13)

Eradication of poverty has priority on the development agenda and it is realised that money alone is not enough. New ideas and new concepts have to be developed and implemented. To reach the target set by DAC approximately 50 million people must every year be lifted above the poverty line from now till 2015. Furthermore, institutional development, with emphasis on health (WHO, 2001) and education (Sen, 1999) needs to be improved.

The smallholder poultry concept developed in Bangladesh is one of the tools that has proven to be effective in reducing poverty in rural areas. Most notably, poultry production has proven to be a unique entry point for the poorest segment of the village population to reverse the poverty spiral.

The strategy is to develop a model by running a pilot programme in a given area, but with a vision to apply it countrywide. It is therefore important from the very beginning to have a concept of the end-of-project-situation and to incorporate the idea in the poverty reduction policy paper. Focus should be on creating an

enabling environment, selection of potential beneficiaries and formation of community groups and on capacity building.

3.1 Enabling environment

An enabling environment means access to credit and to all inputs and services required to minimise the risks in investment in income generating activities. It means that things needed are available at time within the local environment from the perspective of those that need them. Before the introduction of structural adjustments, state or heavily subsidized cooperative marketing boards were significant components of such an enabling environment in most developing countries or government departments were deeply involved in providing these services. At the present time the emphasis in development is on democracy and human rights with the associated organisational freedom and space for civil society. Such freedom and space will permit the establishment of organisations - NGOs - that cater to the needs of the poor as it is seen in Bangladesh.

The main elements in the enabling environment for the smallholder poultry model are to allow for the establishment of institutions that work to ensure:

1. access to poultry production and health services;
2. access to feed;
3. access to improved hens;
4. access to credit;
5. access to marketing facilities.

Marketing is normally not a problem for the poorer segment of the village population. On the contrary, *the problem is that the poor do not have a marketing problem*; they have nothing to sell. However, if the production of eggs and chickens is to exceed the demand within the village, then marketing will be one of the activities constituting an enabling environment.

Establishing an enabling environment must be an integral part of a project. However, when established, the operating and maintaining of the activities constituting the enabling environment must be a pure business operation with full cost recovery.

3.2 Community groups

Experiences show that poor people are creditworthy, can manage a loan and make rational investments if they get the opportunity and if they can comprehend the consequences. However, experiences also show that it is a difficult process to reach a level where the poor can comprehend the consequences and is willing to take the risk to invest in an income-generating activity. It is always a risk to take a loan.

Establishment of community groups, composed of people of socially equal status, seems to be a valuable tool in empowering the poor. In the group they support each other, they become aware of their own strengths and rights, and they are informed about their possibilities to work themselves and their families out of poverty.

The process of establishing community groups and facilitating group support is not easy. It is time-consuming and requires commitments. However, the empowerment process, which the group experiences, is an important element in teaching the group to make full use of the enabling environment and reverse the poverty spiral.

A village group, composed of members of socially equal status, is an excellent entity to disseminate improved technology, a cost-effective entity to disseminate extension messages, and a secure entity for disbursement of loans.

3.3 Capacity building

In the early phase, it is important to have a vision of

the end-of-project situation and to see the project in a bird's eye perspective with one eye, while at the same time with the other eye try to apply the perspective of the poor at the grassroots level.

All stakeholders must be involved in the pilot phase and the implementation set-up must be a mirror of the organisation to be responsible for the wider application of the concept.

Human resource development is often the most important activity in the pilot phase as well as in the dissemination phase.

Bangladesh is fortunate in having NGOs with capabilities to implement poverty alleviation programmes on a large scale. In most other countries, such capacity building needs to be a component in the programme. In this respect, it is important from the very beginning to have a strategy for transformation of the implementing organisation into a sustainable organisation, which is independent of donor support, and to have a strategy for human resource development and for other support that may be required.

3.4 Opportunities

The main opportunity is development of an effective tool for poverty alleviation. In Bangladesh 200,000 new households are included in the poultry work every year for a donor support of less than 100 US\$ per household, not given to the beneficiaries but used for capacity building and human resource development. Impact surveys show that just two years after the programme is implemented, the number of beneficiaries living below the poverty line is reduced from more than 80% to below 50%. While these figures suggest that the approach described in this paper may be a helpful tool, it is clear that it cannot stand alone. A government's macro-economic policies need to be pro-poor in order for people to stay out of poverty. Thus,

studies in Bangladesh (Rahman and Hossain, 1995) show that there is considerable movement of households *in and out* of poverty and this two-way movement resulted in a relatively small decline in the overall poverty with the proportion of extreme poor declining from 31 to 23% and the moderate poor stagnating around 29%. Likewise, an intervention with poultry, as described in this paper, will not protect poor people in Bangladesh against the natural disasters that hit the country from time to time, but it can help them build up their asset base, which in times of catastrophe is an important tool in the households' coping strategies (del Ninno *et al.*, 2001).

However, to return to the main theme of the paper, groups other than the direct target group can benefit from the programme:

1. the enabling environment gives all the villagers access to poultry farm input supplies and services;
2. the concept paves the way for disbursement of micro-credits in a cost-effective way;
3. the village groups will facilitate easier formation of associations through formalised village livestock groups;
4. the concept helps people acquire the skills that are required for a business set-up to distribute input supplies to the villages;

4. CORE PRINCIPLES

In September 1999, the World Bank Group and IMF decided that nationally owned participatory poverty reduction strategies should provide the basis for all their concession lending and debt relief, which has led to the development of poverty reduction strategy papers (www.worldbank.org/poverty/strategies). These papers cover six core principles underlying the development and implementation of poverty reduction strategies. The strategies should be:

- country-driven, involving broad based participa-

5. the concept can form the basis for a marketing organisation for farm products;
6. the established beneficiary groups can be used by other NGOs, having the same target groups, to implement other activities, such as informal education for drop-out children from primary schools, extension activities, family planning, HIV/AIDS prevention, etc.

In short, the initiatives will add to the social capital of the people (Dowla, 2001; Karlan, 2002).

3.5 Closing remarks

The OECD and some politicians in donor and recipient countries have a vision and a strategy for poverty reduction. However, the development community, i.e. the technicians, professionals, researchers, and development workers must also have a vision to develop sustainable concepts ready for countrywide replication. The smallholder poultry development concept is a unique, but unfortunately rare example of such a concept, and it will need to be adjusted continuously on the basis of new experiences to develop a replicable model.

tion by civil society and the private sector in all operational steps;

- result-oriented, and focused on outcomes that will benefit the poor;
- comprehensive in recognising the multidimensional nature of poverty, but also
- prioritise so that the implementation is feasible, in both fiscal and institutional terms;
- partnership-oriented, involving coordinated participation of development partners (bilateral, mul-

tilateral, and non-governmental);

- based on a long-term perspective for poverty reduction.

5. ADAPTATION AND REPLICATION

Practical experiences with adaptation and replication of the smallholder poultry concept are rare. However, lessons from the first phases of the process are available and some generalisations are possible. The critical point is still how to operationalise an adapted model, how can it be replicated for wider dissemination. Malawi is in the middle of this process, but it will take some years before the model is institutionalised. This chapter will be more about the adaptation process and less about the replication process (Jere, 2001). The following steps are an essential part of the adaptation process:

1. awareness;
2. development of a specific model through field trails;
3. full scale test, pilot programme;
4. modality development.

Experiences have shown that it is essential to have a facilitator with in-depth expertise in the philosophy of the smallholder concept to guide the adaptation process. Otherwise the process may easily be trapped in some of the constraints mentioned below.

5.1 Awareness

Awareness is a key word in adaptation of the concept. Prejudice with respect to the capability of the target group is a common attitude among stakeholders and that goes from people high-up in government to the village community. An awareness programme must therefore target all potential stakeholders, from the government level to the village community. The awareness process goes through a number of stages:

1. selection of a core group of staff to be responsible

The poultry smallholder concept is tailored to these core principles. Also the five essentials defined in the beginning of the paper are in full accordance with these principles.

for the awareness programme;

2. deployment of a facilitator;
3. exposure to the Bangladesh model (visit to Bangladesh);
4. PRA analysis in a selected pilot area;
5. discussions and workshops;
6. selection of a task force to be responsible for implementation of a pilot project.

5.2 Constraints

Constraints, which have to be addressed and that are related to the first step in the adaptation process, are:

5.2.1 Objectives

It may be a wrong strategy to call the concept a smallholder *poultry* model because it is a general misunderstanding to relate the objectives of the concept to poultry production, e.g. egg production instead of *relating the objectives to poverty alleviation*. This was also the case in Malawi, and the approach to formulate a Malawi model focused at the beginning mainly on disciplines related to poultry production and less on the socio-economic parameters.

The objective of applying the concept is poverty alleviation, and poultry is only an instrument in the process of reversing the poverty spiral. It is important that this objective is clear and understood by the stakeholders at the outset in order to prioritise the socio-economic disciplines in the project formulation.

5.2.2 Target group

It is surprising so many organisations and individuals that have a policy to target the poorest, but either on

purpose or in reality exclude the poorest segment of the population from their activities. Common phrases are: the poorest do not have the capability to learn, the poorest are lazy, the poorest have chosen to live in poverty, or it is better to start with the better-off and then the poor will benefit through a trickle-down effect - an approach, which has been rejected long ago.

The truth is that it is troublesome to have the poorest as the target group. It demands a lot of work and commitment and the project staff do not have the experience to work with the poor. However, the example from Bangladesh clearly shows that the poorest both have the capability and the willingness to work their way out of the poverty if they get the opportunity.

In Malawi, the project has been through the same obstacles. The donor-supported projects, which were assumed to support the smallholder poultry concept, had in fact on purpose excluded the poorest segment. The local decision makers were reluctant to target exclusively the very poor, and the same reluctance was observed in the village communities. The turning point was a very committed project staff that understood the objective of the Bangladesh concept and was willing to try to involve the poorest of the village population in the programme. They worked hard and committed in order to reach the poorest in the village.

The results from two full-scale test villages have been promising. In one of the villages there was only one family out of 55 potential families that did not contribute with savings and participation in group activities. In the other village, there were only three families out of 35 that did not want to participate or contribute.

5.2.3 Easiness

At first sight, the smallholder poultry concept is a very simple concept and an obvious entry tool for poverty alleviation programmes. It seems to be a

common mistake, however, to think that it is easy to adapt the concept to different conditions. It is not just a simple matter of establishing a production system with, for instance a chicken rearer and a number of smallholder key rearers and organise a vaccination programme. Socio-economic parameters are often an overlooked element and repeatedly it is completely neglected that the target groups are the poorest segment of the village populations. Another critical and neglected aspect is sustainability. The enabling environment must be maintained on pure business conditions. That is of utmost importance.

Even though the components constituting the concept may all be simple, it must be realised that the *interaction* between the components is a complicated matter. Furthermore, the target group is one of the essentials of the concept and to approach this group is far from being a simple matter.

5.2.4 Cultural, social, demographical, and infra-structural environment

A common objection with regard to replication of the Bangladesh concept is the differences in the cultural and the social environment between two countries. That is of course a relevant objection, and differences do exist. The fundamental question is: do the poor basically behave the same way, independent of cultural and social differences?

Preliminary observations indicate that the majority of the poorest want to and are able to work themselves out of poverty if they get the opportunity. This behaviour seems to be independent of cultural differences, and this observation is also supported by experiences from replication of the Grameen Bank concept. Amartya Sen, in his book *Development as Freedom* (1999) describes similarities in the behaviour of the very poor in his capability approach to poverty alleviation.

This does not imply that cultural differences are of minor importance, but only that target group response when exposed to the concept is very similar. The approach to organise and implement the concept has to be adapted to the prevailing conditions in a specific country and that is a complicated process.

5.3 Village model development

In general, there is very limited knowledge about modern poultry production among villagers and extension staff, and it is important that facilitators in a model development are aware of that. Another important aspect is that the actors must have been exposed, in one way or another, to the Bangladesh model as it is today. It is of equal importance that the facilitator is aware of the complexity in the Bangladesh model and that the model has been developed over two decades. In short, simplicity is a key word in the first stage of formulation of the first prototype. Even though the first phase in the development of a village model has focus on the technical aspects, it is important that all involved in this process are aware of the essentials of the concept and are true to the idea behind these essentials. The model development can be divided into three steps:

1. draft model formulation;
2. field test;
3. model adjustment.

The draft model should be kept as simple as possible and with focus on the key rearer. In fact it can be so simple that the model is composed of only the key rearer, based on local hens, and the supply and service activities. In Malawi, the model is composed of key rearers with 5 HYV (high yielding variety) hens and three local hens, model breeders with 10 HYV parent hens, feed sellers and vaccinators as one enterprise, and egg sellers.

The field test must focus on simple technical aspects,

but encompass protection, vaccination and supplementation. The basket system (chickens kept under a basket the first weeks of life) has proven to give a good protection, but the techniques have to be learned. Vaccination is an essential part of the field test, and the test will often reveal that vaccination against Newcastle disease alone is not enough to protect the chickens against other epidemic diseases. Supplementation of feed is also an essential element, but it is important to optimise the use of the scavenging feed resource base.

The first field test may need some adjustment both regarding the components and regarding the technical aspects. In Malawi, it was necessary to conduct a new field test before the full-scale test was carried out.

5.3.1 Full-scale village test

Design of a full-scale test depends on the actual institutional structure of the involved agencies such as government, NGOs, and micro-credit providers. It also depends on the capability of the involved institutions. There are four important elements in the design of a test:

1. the villagers must experience the test as if an ideal institutional set up is in place and no subsidies shall be given to the beneficiaries;
2. all test activities at village level must mirror an end-of-project situation;
3. all potential stakeholders must actively participate both in design and in implementation of the test;
4. a strategy for all activities must be set up to simulate an end-of-project situation.

It shall be stressed that the villages selected for the full-scale test must be different from those selected for the field test. The villagers in the latter are 'spoiled' by free goods and will expect the same in the next test.

5.4 Modalities

The strategy is of course that a programme for wider dissemination of the model must succeed the full-scale test. It is also obvious that such a programme requires donor support and involvement of a number of stakeholders, government, NGOs, private sector, village authorities and the beneficiaries themselves. The modalities for the next phase are essential elements in the full-scale test and the modalities must include:

1. specification of stakeholder responsibilities;
2. specification of activities, especially those involving donor or government support;
3. cost estimate of each activity;

6. PARADIGM

A paradigm in this context means: 1) a framework concept comprising a set of mutually supporting activities, 2) a set of values expressing or clarifying the impact of the framework activities on poverty alleviation, and 3) methods to continuously improve and disseminate the concept and knowledge related hereto (Jensen, 2000). This paradigm is in many ways inspired from Thomas Kuhn's *The Structure of Scientific Revolutions* (1970).

It is important to be aware of the circular aspect of the approach in the paradigm and not, as is often applied, the linear approach. This means that impact has to be measured against socio-economic parameters related to poverty and not against production parameters related to poultry.

Accessibility to information and experiences is troublesome with very limited number textbooks, databases, journals, or other media in which results and findings are published, and no training institutions directly targeting the concept. However, there has in this respect been progress in the past five years. The World-Wide Web has been an important media for

4. supervision and monitor system including indicators.

The objectives are to develop an implementing organisation involving the government, NGOs, private sector and support institutions and organisations, and to develop a strategy for countrywide dissemination of the model.

dissemination, institutional networks have been established, and the idea of a regional training centre in Bangladesh has been introduced.

The challenge is to continue and to refine this process. Poverty alleviation is complicated and especially in the case where the target group is the poorest segment of the village population. It is also naive to believe that it can be done without a substantial donor support. However, knowledge and cooperation are of equal importance.

The smallholder poultry concept is an important tool in the fight against poverty, but the objectives can only be accomplished if we have an effective instrument to share information and a reliable tool to document the replication ability and achieved results. One of the next steps will be to institutionalise a paradigm in which experiences are accumulated and disseminated, a paradigm which is adjusted according to mistakes and successes, and a paradigm which has a framework that facilitates training, education, and research.

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News

Third Research Co-ordination Meeting of the FAO/IAEA Co-ordinated Research Programme in Quatre Bornes, Mauritius

The Third Research Co-ordination Meeting of the FAO/IAEA Co-ordinated Research Programme (CRP) on the “Assessment of the effectiveness of vaccination strategies against Newcastle Disease and Gumboro Disease using immunoassay-based technologies for increasing farmyard poultry production in Africa” took place in Quatre Bornes, Mauritius, from 6 to 10 May 2002. The meeting was attended by 22 persons com-

ing from various African countries as well as from Australia, Italy, Denmark, Austria and USA.

All presented scientific papers, agenda, conclusions and recommendations and list of participants are available on the Internet:

<http://www.iaea.org/programmes/nafa/d3/mtc/3rcm-mauritius.html>

For more information or questions on any issues relating to this CRP, please contact:

Dr. Martyn H. Jeggo, Animal Production and Health Section, Joint FAO/IAEA Division of Nuclear Techniques in Food and Agriculture, International Atomic Energy Agency, P.O. Box 1000, A-1400 Vienna, Austria, Tel: (+43 1) 2600-26053, Fax: (+43 1) 26007, E-mail: <m.h.jeggo@iaea.org>, Website: <http://www.iaea.org>

India: Eggs to combat snakebites

[Source: Poultry International, January 2002, Vol. 41, No. 1, p. 4]

Research using biotechnological tools is being conducted in India to counter poisonous snakebites with anti-venom from chickens' eggs. If successful, the egg anti-snake venom (ASV) would be a welcome development as the present horse ASV is costly and has side effects, said Dr. P.V. Subba Rao, Vittal Mallya Scientific Research Foundation's scientific director.

About 50 eggs could carry the same amount of ASV as one litre of horse blood. As a hybrid hen could lay 250 eggs a year, the cost of the ASV from chickens' eggs would be much less than the horse ASV, and had the additional benefit in that it was likely to have fewer side effects, he said.

Indonesia: Small-scale poultry farmers suffer

[Source: Poultry International, January 2002, Vol. 41, No. 1, pp. 4-6]

In Indonesia, the threat to boycott American products and even raid fast-food outlets such as McDonald's and Kentucky Fried Chicken, while adversely impacting on tourism, has also been of great concern to some 13,000 small-scale poultry farmers in East Priangan. East Priangan, which lies in the south-eastern part of West Java, comprises three districts Ciamis, Garut and Tasikmalaya, which are a major supplier of chickenmeat to the two "American" fast food outlets. A month after the anti-American movement exploded in some big cities of Indonesia, the poultrymeat trade of East Priangan slumped by about 50 billion rupiahs (5 million USD). This slump in income has frightened

farmers and more than 75,000 individuals who rely on the poultry sector. Poultry production started to boom in the area in 1989, and had the effect of lowering the number of school dropouts, and also elevated the living standards of many. East Priangan sends some 135,000 – 160,000 chickens/day to Jakarta and the same quantity to Bandung. McDonald's receives some 70% of these, the remainder going to Kentucky Fried Chicken, California Fried Chicken and Matahari's or Hero's supermarkets.

The local market, generally absorbs around 30% of production from East Priangan, but as a result of the

troubles it has become oversupplied and prices have dropped to 0.55 US cents/kg of meat, which compares with a production cost in the region of 63c/kg. Should

the anti-American movement persist in Indonesia, then local poultry producers maintain that they will be the worst hit.

Publications

Characteristics and parameters of family poultry production in Africa

A book entitled “Characteristics and parameters of family poultry production in Africa” was recently published by the Joint FAO/IAEA Division of Nuclear Techniques in Food and Agriculture. One of the tasks of this Joint FAO/IAEA Division is to promote the use of nuclear techniques for improving disease diag-

nosis and monitoring disease control programmes in order to optimise animal production in developing countries. The book presents the results of a concerted and structured research on family poultry production that was initiated in 1998 in 12 different African countries.

Applicants from developing countries can obtain the book free of charge, whereas applicants from developed countries can order it at the cost price of Euro 6.

For further information about the book (ISBN 90 5782 094 3) contact:

Animal Production and Health Section, Joint FAO/IAEA Division of Nuclear Techniques in Food and Agriculture, International Atomic Energy Agency, P.O. Box 1000, A-1400 Vienna, Austria, Website:
<http://www.iaea.org>

Community-Based Animal Health: A How-To-Do-It Guide

This manual, the product of a partnership between Network UK, the Participatory Community-based Animal Health and Vaccination (PARC-VAC) Project, Organisation of African Unity/Interafrican Bureau for Animal Resources, and Intermediate Technology Publications, was written by a team of veterinarians and livestock professionals with field experience of community-based projects in Africa and Asia. The guide contains contributions and case studies from projects around the world, presented as text boxes, stories, anecdotes, diagrams, cartoons and photographs. The manual, co-ordinated by Network UK and PARC-

VAC, was published in March 2002. The publication consists of 9 chapters [Introduction; Getting started; Taking a long-term perspective: sustainability issues; Participative training methods and approaches; How to design and implement training courses; Monitoring and assessment of community-based animal health projects; CAHWs and disease surveillance (CAHW = community animal health worker); The rules of the game and how to influence policy; Sharing experiences and networking] as well as [List of Contributors; Further Reading Index].

For further information about the book contact:

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The book can be ordered through:

- *ITDG Publishing, 103-105 Southampton Row, London WC1B 4HL, UK*
Website: <http://www.itdgpublishing.org.uk>

Managing Village Poultry in South Africa

The manual, 'A Simple Guide to Managing Village Poultry in South Africa', is a practical and easy-to-use guide to backyard chicken keeping. It is written in simple English by David Farrell (University of Queensland, Australia, E-mail: <d.farrell@mailbox.uq.edu.au>). The publication, which was made possible through a LINKS project funded by the Australian government overseas aid programme and a grant from the International Union of

Nutritional Sciences, includes translations in Zulu, Xhosa, Afrikaans, Venda and Sesotho, as well as many illustrations. The guide consists of five sections [Housing; Breeding and hatching; Rearing and management; Feeding; Health]. The book will help people who have a few chickens to produce meat and eggs for their own use and to sell to other people. It will also be useful for small-scale farming projects as well as in literacy and adult education.

Copies of this manual (ISBN 0 620 26105 6, R4.00 per copy) can be obtained from:

- *Josie Egan, Project co-ordinator and distributor, 9a Broad Road, Wynberg, Cape Town 7800, South Africa*
Tel: +27 21 797 8782

International Diary

11th European Poultry Conference in Bremen, Germany

The 11th European Poultry Conference will take place at the Bremen Maritim Hotel, Congress Centre, Bremen in the North of Germany, from 6 to 10 September 2002. The objective of the conference is to update information in all fields of poultry science and production. Special emphasis will be placed on issues related to consumer acceptance of products and to production systems: changing breeding goals, nutrition and disease control in response to new standards for animal welfare and ecological production.

The Conference, which has German and English as official working languages, will be structured upon

seven symposia. One of these symposia will be devoted to 'Rural Poultry Production'. This symposium will be chaired by E.B. Sonaiya (Nigeria)/A. Valle-Zarate (Germany). Papers to be presented will be: 'The perspectives of egg production with free range chickens in Africa, Latin America and Bhutan' by H. de Vries (The Netherlands); 'Rural poultry development projects and poverty alleviation' by A. Jensen (Denmark); 'Rural poultry and genetic diversity and conservation: Lessons from South Africa' by C. Fourie (South Africa); and 'Rural Poultry Science: emerging concepts in theoretical and empirical research' by E.B. Sonaiya (Nigeria).

Detailed information about the conference can be obtained from the Organizing Secretariat:

Organizing Secretariat, Congress Partner GmbH, Birkenstrasse 37, D-28195 Bremen, Germany,

Tel: (+49) 421 303131, Fax: (+49) 421 303133, E-mail: bremen@cpb.de

Regular updates and information are also available on the Internet at: <http://www.epc2002.de>

INFPD Workshop in Dhaka, Bangladesh

A workshop on the Bangladesh Semi-Scavenging Smallholder Poultry Model as a tool for fighting poverty and promoting food security will be held in Dhaka, Bangladesh, from 20 to 24 October 2002. The theme of the workshop is "People Fight Poverty with Poultry: Learning from the Bangladesh Experience".

WHO CAN ATTEND?

Development professionals from Africa, Asia and Latin America employed by the National Agricultural Research Systems (universities, research institutions), the government and the NGOs. Delegates from industrialized countries working for consultancy companies, multilateral and bilateral aid agencies and UN agencies are welcome to attend.

INTRODUCTION

The workshop is a follow-up to the 2nd INFPD/FAO Electronic Conference on "The Bangladesh Model and other Experiences in Family Poultry Development", May 13 - June 8, 2002. Both the workshop and the e-conference are part of a consultative process to review the experiences from various countries from a technical, economic and policy perspective. The e-conference forms a suitable background for the workshop which is designed to explore the guidelines for the implementation of family poultry projects and programmes for poverty alleviation and food security in such a way as to effectively assist decision makers in governments, NGOs and donor organisations to optimise the impact of the projects through the use of credit, technical and

social components of whichever model they choose to use.

One of the four objectives of INFPD is to promote and support poultry development protocols. There are (and have been) several approaches to smallholder poultry development. Examples include the 12 projects financed by IFAD in the 1980s; and the FAO's rapidly expanding SPFS which emphasise family poultry as a means to achieve food security. DANIDA, through its long-term and continuing partnership with the Government of Bangladesh (GOB), has drawn increasing attention to the model developed in Bangladesh jointly by the GOB Department of Livestock Services and the Bangladesh Rural Advancement Committee, an NGO. This model has had very good success within Bangladesh and has encouraged many countries, particularly in Asia, to initiate projects in family poultry.

WORKSHOP AIMS AND OBJECTIVES

Poverty eradication is a ranking priority of many countries just as food security has become a pressing goal for developing countries as reiterated at the World Food Summit (June 10-13, 2002) in Rome. What can other countries learn from the experience of Bangladesh? A face-to-face workshop with the women and men who initiated, developed and implemented the Model is expected to provide a unique opportunity for useful exchanges of experiences.

The objectives of the workshop are:

1. To provide an opportunity for close familiarity with the Model;
2. To carry out a S.W.O.T. analysis of the Model; and
3. To initiate a Poultry Model Support Group within INFPD.

These objectives will be achieved during the following workshop schedules for Day 1 (October 20) to Day 5 (October 24).

- Day 1 – Plenary sessions and workgroup meeting
- Day 1 evening to Day 3 dawn – Field trip
- Day 3 – Workgroups and Plenaries
- Day 4 – Workgroups and Plenaries
- Day 5 – Workgroups and Plenaries

Further information can be obtained from the following persons:

- INFPD – "E. Babafunso Sonaiya" <fsonaiya@oauife.edu.ng><fsonaiya1@yahoo.com>
- FAO – "Emmanuelle Guerne-Bleich" <emmanuelle.guernebleich@fao.org>
- Network for Smallholder Poultry Development – "Anders Permin" <ape@kvl.dk>

XXII World's Poultry Congress in Istanbul, Turkey

The XXII World's Poultry Congress will take place at the ICEC (Istanbul Convention and Exhibition Center) in Istanbul, Turkey, from 8 to 13 June 2004. The basic scientific program will consist of keynote lectures and free papers in several areas of poultry science. There will be ample time for poster viewing during

the whole congress. The general topics to be covered include: Breeding and Genetics; Biotechnology; Nutrition; Health and Hygiene; Husbandry and Animal Welfare; Environment; Economics; Marketing; and Education. It is expected that INFPD will organize a symposium during this event.

More information on scientific matters can be obtained from:

Secretary of WPSA Turkish Branch

Dr. Servet Yalçın, Ege University, Faculty of Agriculture, Department of Animal Science, 35100 Izmir, Turkey
Tel: +90 232 388 4000/1449, Fax: +90 232 388 1867, E-mail: <yalcin@ziraat.ege.edu.tr>

Detailed information about the congress will progressively be made also available on its website at:

<http://www.wpc2004.org>

International Conference on Agricultural Science and Technology in Texas, USA

The International Conference on Agricultural Science and Technology (ICAST) will be held in Houston, Texas, USA, from 13 to 16 April 2003. This conference will be organized by the Texas A&M University System Agriculture Program and the City of Houston. It will provide a venue for dialogue and exchange among scientists, academics, government policymak-

ers, business and industry leaders. The conference will include plenary sessions with international leaders, concurrent symposia on critical areas of concern in agricultural (including family poultry) science and technology development, a trade show and exhibition, as well as pre- and post-conference tours and activities at locations throughout Texas. Building on the mo-

mentum generated by the first ICAST, which was held in Beijing, China in 2001, the 2003 conference will further promote interaction, innovation, cooperation and change leading toward a sustainable global future.

Additional information can be found at: <http://www.2003icast.org>

For a brochure, please contact the conference secretariat (Tel: 1-979-845-1551, Fax: 1-979-845-9749) at: [<secretariat@2003icast.org>](mailto:secretariat@2003icast.org) or fill out the reply form at: <http://www.2003icast.org/replyform.htm>

3rd International Seminar on Tropical Animal Production in Yogyakarta, Indonesia

The 3rd International Seminar on Tropical Animal Production (3rd ISTAP) will take place at the Gadjah Mada University Center in Yogyakarta, Indonesia, from 15 to 16 October 2002. The theme of the 3rd ISTAP is “Animal Production and Total Management of Local Resources”. It will cover broad range of topics: genetics, breeding, feeding, reproduction, management, socio-economics, post-harvest technology, production system in friendly environment and other aspects related to the development of animal production (including family poultry production) in the tropics. Objectives of this seminar, which has English as official working language, are to provide (a) a perspective and insight vision into animal production industries and systems in the tropical areas, and (b) a forum for exchange information and ideas on the tropical animal industry based on local resources facing the globalization era.

Information relating to submission of abstracts, registration, accommodation, scientific and cultural programmes, exhibitions, etc. can be obtained from the Organizing Committee at the following address:

Dr. Ali Agus or Dr. Edi Suryanto, Faculty of Animal Husbandry, Gadjah Mada University, Jl. Agro Karangmalang, Yogyakarta, 55281 Indonesia, Tel: (62) (274) 901345/513363 / 901330/521578, Fax: (62) (274) 521578

E-mail: [<jstap3@eudoramail.com>](mailto:jstap3@eudoramail.com)

Regular updates and information are also made available on the Internet at: <http://ugm.ac.id/istap3>