

Role of Poultry Farming in Rural Development

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ABSTRACT

More than a billion people currently live in extreme poverty: these people are powerless, isolated, vulnerable and malnourished. At the 2000 World Food Summit in Rome, Heads of State renewed their commitment to halve hunger and malnutrition before the year 2015. The indications are, however, that progress is not being made at the required pace. Indeed, the International Food Policy Research Institute (IFPRI) predicts that the number of malnourished children will actually increase by 25% to 30% before 2025 if no major action is taken.

The paper presents a global overview of the development of the poultry sector and of the role of small-scale, family-based poultry production in developing countries. Major initiatives undertaken to develop poultry as a tool for rural development and their rationale are presented. The constraints facing the future of small-scale poultry production are discussed, with a particular focus on poultry disease given the current outbreak of highly pathogenic avian influenza in Asia. Geographical 'hotspots' are identified where interventions are urgently required and where small-scale poultry has the potential to make a substantial impact. Finally, the paper stresses the need for more long-term and wider perspectives in the policies and strategies guiding the development of the poultry sector.

Keywords: *food security, poultry, poverty, development.*

INTRODUCTION

Poultry meat is the fastest growing component of global meat production, consumption, and trade, with developing and transition economies playing a leading role in the expansion. In addition to providing opportunities to increase poultry exports, rising poultry production spurs growth in global import demand for feeds and other inputs and generates up- and downstream investment opportunities (Regmi, 2001).

World poultry meat output increased nearly eightfold between 1961-2001, while the output in middle-income countries even rose more than twelve fold. The biggest global poultry meat producers are the United States, the EU, China, Brazil, Mexico, Canada and Japan. Among middle-income countries, China was the major producer in 2001, followed by Brazil, Mexico, Argentina, Iran, Russia, Egypt and Poland. In 1961, middle-income countries produced 34

percent of world poultry meat, high-income countries 61 percent, and low-income countries the remaining 5 percent. By the mid-1990s, middle-income country production had reached a level of 47 percent of the output of high-income countries. By 2001, middle-income countries accounted for the major share of world poultry production (52 percent) compared with 42 percent in high-income countries and less than 6 percent in low-income countries (Regmi, 2001).

The commercial sector has achieved much, making eggs and poultry meat a nourishing and affordable dietary item for millions of people. However, despite the rapid development of commercial poultry systems worldwide, it has been estimated that still more than 80 per cent of the global poultry population is found in traditional family-based production systems and that the latter contribute up to 90 percent of the total poultry products in many countries. The large-scale commercial and small-scale rural family poultry sectors need not be mutually exclusive, nor be in direct competition. Indeed, the commercial sector with its wealth of human, technical and financial resources could play a major catalytic role in promoting rural poultry production as a practical and viable option for poverty alleviation.

The challenge to reduce poverty and malnutrition cannot be achieved by one single intervention and, in isolation, no single activity will have a major impact. However, livestock, especially poultry species, have been shown to provide a practical and effective first step in alleviating *abject* rural poverty. Livestock provide a renewable asset, a ready source of cash, quality nutrients in the human diet, and are often essential for meeting important social and cultural needs and obligations. Targeting small-scale, family-based poultry systems as an effective entry point for poverty alleviation programmes is gaining widespread acceptance. Provision of an enabling environment that allows vulnerable and disadvantaged people access to credit, improved husbandry practices, goods, services, improved genotypes and better market opportunities can make a real difference. Unfortunately, there are policy distortions and trade practices that marginalize and exclude the poor; these need to be addressed to take advantage of the opportunities livestock offers for rural development and poverty alleviation.

THE ROLE OF SMALLHOLDER POULTRY PRODUCTION

In developing countries nearly all families at the village level, even the poor and landless, are owners of poultry. Furthermore, poultry are mainly owned and managed by women and are often essential elements of female headed households. Poultry are socio-culturally important with few religious taboos attached. Production is feasible at village level, where only low cost technology is needed to improve production considerably. Low investments only are required to achieve

such change, land ownership is not a constraint, and village production is environmentally friendly (Upton, 2004).

The role of family poultry in poverty alleviation, food security and the promotion of gender equality in developing countries is well documented (Guèye, 2000). Family poultry production represents an appropriate system to contribute to feeding the fast growing human populations and to provide income to poor small farmers, especially women (Gujit, 1994; Alders, 1996; Kitalyi and Mayer, 1998). It makes good use of locally available resources, requiring low inputs. Though generally considered secondary to other agricultural activities by smallholder farmers, poultry production makes an important contribution to supplying local populations with additional income and high quality protein. Poultry products can be sold or bartered to meet essential family needs such as medicine, clothes and school fees. Village chickens are active in pest control, provide manure, are required for special festivals and are essential for many traditional ceremonies (Alders et al., 2003).

A recent study in Mozambique (Harun, 2001) showed how village poultry play a key role in the local economy, and how increased production has the potential to improve food security, assist in poverty alleviation and mitigate the adverse economic impacts of HIV/AIDS for rural populations.

MAJOR POULTRY DEVELOPMENT INITIATIVES

For many decades development agencies, international agencies, governments and non-government organizations have been interested in helping the family poultry industry to develop because they realized its potential. The pace and scope of such support have expanded over the last 20 years and some major initiatives have been undertaken. They include, among others:

•The Bangladesh Model and its replications

Dolberg (2003) and Fattah (2000) describe the evolution in the work of the government of Bangladesh which led to the development of the Bangladesh Poultry Development Model and has been very effective in reaching and involving poor women in economic development.

Bangladesh is a good example of how poultry can have an impact on the empowerment of the poorest women and on poverty reduction (Nielsen, 1998). During the 1980s the Department of Livestock Services (DLS) and the Bangladesh Rural Advancement Committee (BRAC) developed a model for semi-scavenging poultry production, based on women groups. The idea was to replicate large-scale commercial poultry production with service, production and

consumer units, but bring it down to the village level where women groups would act as the production units.

The main feature of the model is that the supply of inputs and services is turned into an income earning opportunity for poor people carefully sequencing its components and ensuring appropriate linkages between various actors. The focus is on poverty reduction, i.e. distribution of benefits, rather than on increasing the supply of eggs and poultry meat. The main components are the involvement of NGOs that have access to groups of very poor women, the provision by NGOs of micro-credit and training to help groups establish small, semi scavenging, egg-laying units, and special training for poultry workers, feed distributors and egg traders.

Dolberg (2003) contrasts the Bangladesh experience to that of India where, in some States, the commercial sector has a strong presence. He stresses that project 'models' need to be adapted the conditions prevailing in different countries. The smallholder concept developed in Bangladesh is currently in an adaptation process to conditions in Malawi (Jensen, 2001; Gondwe, 2001) and Southern Africa (Ahmed, 2000). The adaptation process is rather complicated as all stakeholders have to be involved and need to be convinced that the poorest segment of the village population is capable of contributing and managing an income-generating activity based on loans.

•**The Network for Poultry Production and Health in Developing Countries**

The Network for Poultry Production and Health is based on the poverty alleviation concept developed in Bangladesh with an integrated poultry chain as income-generating activity. The concept has been institutionalized through the Danida/IFAD-supported Smallholder Livestock Development Project (Jensen, 1998, 2000). The vision of the Network is to build up, through a multi-disciplinary approach, the institutional capacity in Denmark and to establish one million smallholder units per year in developing countries for a donor cost of US\$100 or less per participating family. The Network employs a three-pronged strategy to reach the planned institutional capacity. It facilitates human resource development in Denmark and in developing countries; coordinates research and development related to dissemination of the concept; and provides support to planning of pilot projects and to project implementation.

Lack of accessibility to literature, such as documents, guidelines, manuals, etc. is a major constraint of poultry development practitioners (Jensen, 2000). Previous experiences are often lost and new projects or programmes start from scratch. Even though interest is increasing and more development professionals than ever before are involved in rural poultry keeping, ways of communication and sharing experiences are still in the conception phase.

•The ACIAR effort on Newcastle Disease Control

From 1983 the Australian Centre for International Agricultural Research (ACIAR) started to support work on the development of Newcastle Disease vaccine and delivery programmes, focusing on village chickens. Progress had been made in Southeast Asia and Africa with initiatives spearheaded by ACIAR through the promotion of an oral/eye-drop vaccine based on a naturally attenuated Newcastle disease strain with the characteristics of heat resistance and an ability to spread horizontally within a flock. The promotion of this vaccine has been significant in reducing ND in village poultry (Alders et al., 2001; Amakye-Anim et al., 1998; Spradbrow, 1993-94; Harun et al., 2001). More information can be found on the ACIAR web site <www.aciar.gov.au> and the University of Queensland web site <www.vsap.uq.edu.au/ruralpoultry>.

•The International Network for Family Poultry Development (INFPD)

This network, which started as the African Network for Rural Poultry Development (ANRPD), was set up in 1989. The name was changed to INFPD in 1997. INFPD is mainly a network for information exchange, one of its objectives being to encourage higher standards of husbandry that can sustainably increase the productivity of family poultry units. The aim is to achieve this through collecting data and detailed information about family poultry production systems and disseminating the information and distilled advice through a trilingual (English, French and Spanish) newsletter, which is produced twice a year. The web site is <<http://www.fao.org/ag/aga/agap/lpa/fampo1/fampo.htm>>.

•International donor efforts

Smallholder poultry production has been a frequent sub-component of donor funded projects, for example in International Fund for Agricultural Development (IFAD) loan projects, usually targeting poorer rural women (Nabeta, 1997; IFAD, 2003). The most common type of support provided has been credit for small-scale poultry enterprises. When women are given a choice of loan projects, they often choose poultry raising. They are familiar with the activity and set-up costs are relatively low. Frequently IFAD projects have also included other support activities, such as the strengthening of animal health services, the training of beneficiaries in health and husbandry practices, and on- and off-farm adaptive research on topics related to poultry production. The traditional scavenging system has been more successful with the IFAD target group than new semi-intensive systems.

In 2001, the Food and Agriculture Organization (FAO) of the United Nations launched an initiative to facilitate and support the formulation and implementation of policies and institutional changes that have a positive impact on livestock dependent poor livelihoods. The basic rationale is derived from the realization that technology oriented projects in the livestock and related sectors have failed to deliver significant improvements in the livelihoods of the poor, and that an enabling institutional and policy environment is indispensable for enhancing the impact and sustainability of pro-poor interventions. Positive steps would include efficient, fair and equitable access to input and output markets, improved access to livestock services, and development of grass-roots organizations that increase the negotiating power of marginalized groups. The initiative is managed by the ProPoor Livestock Policy Facility (PPLPF) based at FAO headquarters in Rome, funded by DFID (Department for International Development, UK), and will be complemented by 'regional hubs' in South Asia, South-East Asia, the Horn of Africa, West Africa and the Andean region. The web site is: <<http://www.fao.org/ag/againfo/projects/en/pplpi/home.html>>.

•NGOs and other agencies

NGOs play a crucial role in development and are often uniquely placed to target poor livestock keepers without the constraints imposed on and by larger national institutions. However, Jensen and Dolberg (2002) have argued that NGO groups using poultry production as an important tool for targeting poverty alleviation, to be successful, must include reliable ways to document the achieved results and work in an institutional and political environment in which sharing of information is encouraged.

CONSTRAINTS

There are many constraints to the development of smallholder poultry production that need to be addressed. These comprise disease control, protection against various predators, better feeding, genetic improvements, marketing, training and management, access to production inputs, infrastructure and capital, farmer organisation, and, foremost, conducive institutions and governmental policies. However, addressing any one or several of these constraints without attention to all will do little to improve the situation (Permin et al., 2000).

Poultry production has undergone rapid changes during the past decades due to the introduction of modern intensive production methods, new breeds and improved preventive disease control and bio-security measures. These intensive production methods place high demands on proper health, hygiene and management and require only a small, but very skilled labour force. This type of production has also been adopted in developing countries but the scope of adoption has

been limited due to the high inputs and skills required. The progress in industrial poultry production methods has however had little effect on subsistence poultry production methods in rural and peri-urban areas, where inputs into disease control remain minimal. Although this is true in general, there are some geographical hot spots where industrial poultry production and small holder village poultry systems have *both* massively grown in close geographical proximity, notably in Thailand, Indonesia, and China.

The intensification of segments of poultry and pig industries, combined with and in proximity to areas of ever more dense human populations, in conjunction with the increasing ease of travel/transport, has led to 'production' environments, in which the spread and impact of formerly uncommon diseases, such as avian influenza, is greatly heightened and which promote the emergence of new diseases. These factors either place animals in increased contact with a previously unfamiliar disease agents or their natural host, provide potential pathogens with a novel host, or favour increased dissemination. The prevalence of some of these factors is growing in Southeast Asia because of the particular rapid growth of livestock industries in the region (Hoffmann 1998). These developments challenge the traditional disease control methods and indicate that new ways need to be found to prevent or control these emerging diseases.

The HPAI crisis in East Asia severely threatens the viability of the small-scale poultry sector in the region, directly through its dramatic spread and high mortality, but also indirectly through the drastic control measures applied, which rely on massive depopulation. In some countries preventive measures may be instituted which severely constrain participation of smallholders in poultry production, forcing them to leave the sector.

Up to date, policy in the poultry sector has concentrated on promoting technical aspects of poultry production. In economic terms, this has meant working to improve production efficiency. Many diseases have been controlled and the production levels have been increased. These policies have been based on the assumption that improved technical efficiency is in itself a desired outcome without considering the wider effects, such as environmental, ecological and social stability.

Technical issues still dominate policies in the livestock sector. In a survey of Asian livestock policies

Riethmuller (2002) found the issues reported to be of greatest importance were those related to production, infrastructure and marketing. Broader issues such as environmental effects, poverty alleviation and international issues were rarely mentioned. These responses suggest a policy focus on short-term issues with an emphasis on the potential for immediate effects rather than on an appreciation of longer-term more complex issues.

CONCLUSION

Increased investment in livestock production is needed given the rapidly growing demand for animal products and the important contribution of livestock to the incomes and welfare of the rural poor. Investment, from private, public and international sources however needs to be guided by policies and institutions that promote equitable, sustainable, and environmentally friendly long-term outcomes. A systems approach, with consultation among all contributing groups is required for the formulation of the above policies if smallholder (poultry) production development is to overcome the devastation of recent disease events as well as its normal constraints.

REFERENCES

Ahmed, N. 2000. The smallholder poultry model in Bangladesh. In G. Pedersen, A. Permin, and U.M. Minga, (eds.) Possibilities for smallholder poultry projects in Eastern and Southern Africa. Proceedings of a workshop, Morogoro, Tanzania, 20-25 May, 2000. Network for smallholder poultry development, Copenhagen.

Alders, R. 1996. Facilitating women's participation in village poultry projects: experiences in Mozambique and Zambia. Proceedings of the 20th World's Poultry Congress, New Delhi, India, Vol III, 441-447.

Alders, R., Cambaza, A.B., Harun, M. 2003. Village chickens, food security and HIV/AIDS mitigation [Online].

Australia. AusAID Southern Africa Newcastle Disease Control Project, Maputo.

<<http://www.vsap.uq.edu.au/RuralPoultry/content/SANDCP/HIV-AIDS%20paper%20Nov03.pdf> > Accessed 2003 March 10.

Alders, R.G., Fringe, R. and Mata, B.V. 2001. Characteristics of the I-2 Live Thermostable Newcastle Disease Vaccine Produced at INIVE. ACIAR Proceedings of the SADC Planning Workshop Newcastle Disease Control in Village Chickens, Maputo, 6-9 March, 2000.

Amakye-Anim, J., Alders, R.G., Spradbrow, P.B. 1998. Trials with V4 Newcastle Disease Vaccine in Ghana. Fourth Asia Pacific Poultry Health Conference, Melbourne, Australia, November 22-26, 1998, Scientific Proceedings, 124.

Branckaert, R.D.S., Guèye, E.F. 1999. FAO's Programme for Support to Family Poultry Production [Online].

Valby [Denmark]. KVL Department of Animal Science and Animal Health.

<<http://www.husdyr.kvl.dk/htm/php/tune99/24-Branckaert.htm>> Accessed 2004 March 10.

Dolberg, F. 2001. A livestock development approach that contributes to poverty alleviation and widespread improvement of nutrition among the poor [Online]. Denmark. Centro para la Investigación en Sistemas Sostenibles de Producción Agropecuaria (CIPAV). <<http://www.cipav.org.co/lrrd/lrrd13/5/dolb135.htm>> Accessed 2004 March 10.

Dolberg, F. 2003. The Review of Household Poultry Production as a Tool in Poverty Reduction with a Focus on Bangladesh and India [Online]. Italy [Rome]. FAO. <<http://www.fao.org/ag/againfo/projects/es/pplpi/docarc/wp6.pdf>> Accessed 2004 March 10.

Fattah, K.A. 2000. Poultry as a Tool in Poverty Eradication and Promotion of Gender Equality. In F. Dolberg and P.H. Pedersen (eds.). Proceedings of a workshop, March 102-26, 1999, Tune Landboskole, Denmark [Online]. KVL Department of Animal Science and Animal Health.

<<http://www.husdyr.kvl.dk/htm/php/tune99/2-Fattah.htm>> Accessed 2004 March 10.

Gondwe, T.N.P., Wollny, C.B.A., Chagunda, M.G.G., Safalaoh, A.C.L., Chilera, F.C. 2001. Community-Based

Promotion of Rural Poultry Diversity, Management, Utilization and Research in Malawi [Online]. Lilongwe [Malawi]. The Food and Agriculture Organization of the United Nations (FAO).

<<http://www.fao.org/DOCREP/006/Y3970E/y3970e06.htm>> Accessed 2004 March 10.

Guèye, E.F. 2000. The role of family poultry in poverty alleviation, food security and the promotion of gender equality in rural Africa. Outlook on Agriculture, 29 (2): 129-136.

Gujit, I. 1994. Making a difference: integrating gender analysis into PRA Training. Rapid Rural Appraisal Notes No. 19, Special Issue on Training, Sustainable Agriculture Programme, International Institute for Environment and Development. February 1994, 49-55.

Harun, M., Cambaza, A., Alemao, L., Maxhuza, G., Joaquim, M., Macanza, G., Namaneque, A., Lobo, O.,

Alders, R. 2001. Community Based Experiences in Controlling Newcastle Disease in Rural Areas of Mozambique to Achieve Food Security, Poverty Alleviation and HIV/AIDS Mitigation. Mozambique. AusAID Southern Africa Newcastle Disease Control Project (SANDCP).

Harun, M., Massango, F.A. 2000. Village Poultry Production in Mozambique: Farming Systems and Ethnoveterinary Knowledge in Angonia and Tsangano Districts, Tete Province [Online]. Canberra [Aust]. Australian Centre for International Agricultural Research (ACIAR).

<[http://www.aciar.gov.au/web.nsf/doc/JFRN-5J479R/\\$file/PR103%20Chapter%2017.pdf](http://www.aciar.gov.au/web.nsf/doc/JFRN-5J479R/$file/PR103%20Chapter%2017.pdf)>
Accessed 2004 March 10.

Hoffmann D (1998) Factors in the Emergence of Disease in Man and Animals: Implications for, Area-Wide

Integration, In Regional Workshop on Area-Wide Integration of Crop-Livestock Activities, 18-20 June, 1998, FAO Regional Office, Bangkok Thailand. (Livestock, Environment and Development (LEAD), FAO. AreaWide Integration (AWI) of Crop and Intensive Livestock Production [Online]. Rome [Italy].

<http://www.virtualcentre.org/en/res/awi/conf/x610514.htm#P0_0 >Accessed 2004 March 10.

Jensen, H.A. 1998. Network for Poultry Production and Health in Developing Countries [Online]. Valby [Denmark]. KVL Department of Animal Science and Animal Health.

<<http://www.husdyr.kvl.dk/htm/php/tune98/5-HansAskovJensen.htm>> Accessed 2004 March 10.

Jensen, H.A. 2000. Paradigm and Visions: Network for Poultry Production in Developing Countries. In F.

Dolberg and P.H. Petersen, (eds.) Poultry as a Tool in Poverty Eradication and Promotion of Gender Equality.

Proceedings of a workshop, March 102-26, 1999, Tune Landboskole, Denmark. KVL Department of Animal Science and Animal Health. <<http://www.husdyr.kvl.dk/htm/php/tune99/3-AJensen.htm>> Accessed 2004 March 10.

Jensen, H.A. 2001. Replication of the Bangladesh Smallholder Poultry Model. Case from Malawi [Online]. Humlebaek [Denmark]. Poultry Development (Denmark). <<http://www.poultrydevelopment.dk/document/Replication%20Malawi.DOC>> Accessed 2004 March 10.

Jensen, H.A., Dolberg, F. 2002. A Conceptual Framework for using Poultry as a Tool in Poverty Alleviation [Online]. Denmark. U-landslære - University of Aarhus, Denmark.

<http://www.ulandslaere.au.dk/NOTICES/TeachingMaterial/TeachingMaterial_2002/AConceptualFrameworkForUsingPoultry_Version_01_03_02.htm> Accessed 2004 March 10.

Kitalyi, A.J., Mayer, A. 1998. Village chicken production systems in rural Africa household food security and gender issues [Online]. Rome [Italy]. The Food and Agriculture Organization of the United Nations (FAO). <<http://www.fao.org/DOCREP/003/W8989E/W8989E00.HTM>> Accessed 2004 March 10.

Nabeta, H. 1997. IFAD's Experience in Supporting Smallholder Poultry Production System – Annex 1 [Online]. Rome [Italy]. International Fund for Agricultural Development (IFAD).

<http://www.ifad.org/lrkm/theme/husbandry/poultry/poultry_annex1.htm> Accessed 2004 March 10.

Nielsen, H. 1998. Socio-Economic Impact of the Smallholder Livestock Development Project in Bangladesh: Results of the Second Impact Survey [Online]. Hvidovre [Denmark]. KVL Department of Animal Science and Animal Health. <<http://www.husdyr.kvl.dk/htm/php/tune98/4-HanneNielsen.htm>> Accessed 2004 March 10.

Permin, A., Bisgaard, M. 2003. INFPDE – Conferences. The Scope and Effect of Family Poultry Research and Development [Online]. Rome [Italy]. The Food and Agriculture Organization of the United Nations (FAO). <http://www.fao.org/ag/againfo/subjects/en/infpd/documents/econf_scope/add_paper11.html> Accessed 2004 March 10.

Permin, A., Pederson, G., Riise, J.C. 2000. Poultry as a Tool for Poverty Alleviation: Opportunities and

Problems Related to Poultry Production at Village Level [Online]. Canberra [Aust]. Australian Centre for International Agricultural Research (ACIAR). <[http://www.aciar.gov.au/web.nsf/doc/JFRN5J479R/\\$file/PR103%20Chapter%2029.pdf](http://www.aciar.gov.au/web.nsf/doc/JFRN5J479R/$file/PR103%20Chapter%2029.pdf)> Accessed 2004 March 10.

Regmi, A. (Ed). 2001. Changing Structure of Global Food Consumption and Trade [Online]. Washington DC [USA]. Economic Research Service/USDA. Pp103-107. <<http://www.ers.usda.gov/publications/wrs011/>> Accessed 2004 March 10.

Riethmuller, P. (2002) some issues associated with the livestock industries of the Asia-Pacific Region. RAP publication no.2002/06 Food and Agriculture Organisation of the United Nations Regional Office for Asia and the Pacific Bangkok < www.aphca.org/publication/book.html> Accessed 2004 March 10.

Spradbrow, P.B. 1993-94. Newcastle Disease in Village Chickens. Poultry Science Review, 5, 57-96.

The International Fund for Agricultural Development (IFAD). 2003. Innovation in Women's Small-Scale Poultry Activities [Online]. Adapted from Nabata, H., Niamir-Fuller, M. Rome [Italy]. <http://www.ifad.org/gender/learning/sector/agriculture/w_i.htm> Accessed 2004 March 10.

The World Bank Group. 2003. Livestock Development Factsheet [Online]. USA. The World Bank Group. <[http://Inweb18.worldbank.org/ESSD/ardext.nsf/22ByDocName/ThematicBriefLivestockDevelopment/\\$FILE/LivestockDevelopmentFactsheet.pdf](http://Inweb18.worldbank.org/ESSD/ardext.nsf/22ByDocName/ThematicBriefLivestockDevelopment/$FILE/LivestockDevelopmentFactsheet.pdf)>. Accessed 2004 March 10.

Upton, M. 2004. The Role of Livestock in Economic Development and Poverty Reduction [Online]. Rome [Italy]. FAO. <<http://www.fao.org/ag/againfo/projects/en/pplpi/docarc/wp10.pdf>> Accessed 2004 March 10.