

## IMPROVING SUSTAINABLE LOCAL CHICKEN FARMING IN EAST NUSA TENGGARA PROVINCE

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### ABSTRACT

This paper describes short review about how to improve sustainable local chicken farming in East Nusa Tenggara Province. Increasing the productivity of local chicken farming sustainably is important for economic well-being as well as for ensuring food security and nutrition in East Nusa Tenggara Province. Most farmers in Nusa Tenggara Province Indonesia raised local chickens in traditional system. The local chickens are left to scavenge in the backyard, and are provided with limited facilities such as a simple cage, a small amount of food scraps, and no diseases prevention program. Rearing of local chickens faced various problems relating to social, financial and management system. Increasing local chicken productivity could be through good feeding management, well adapted housing management, preventing diseases management, and good marketing management. Improving in feeding management by using feed efficiently, and eliminating use of toxic chemicals. Enhancing all forms of promoting indigenous chicken is also one way to improve sustainable local chicken farming in East Nusa Tenggara Province.

*Keywords: local chicken farming, food security, traditional system*

### INTRODUCTION

Sustainable development is ‘development that meets the need of the present without compromising the ability of future generations to meet their own needs (World Commission on Environment and Development, 1987). Basically, sustainable development is a long-term solution to how we plan our indefinite progress in the future without causing damage to the environment so as to guarantee a safe habitat for the next generations, who will continue to develop their economies, societies, and care for the environment with a similar ideal in mind. The Sustainable Development Goals are the blueprint to achieve a better and more sustainable future for all. The areas that focus on sustainable development in border areas are related to poverty, inequality, climate, environmental degradation, prosperity, peace and justice. The Goals interconnect and in order to leave no one behind.

Local chickens have been raised by most of the rural population of Indonesia, and they represent an important source of meat and eggs. However, they are not able to provide consumption on a daily basis because of their low production. Most farmers in Nusa Tenggara Province Indonesia raised local chickens in traditional system. The local chickens are left to scavenge in the backyard, and are provided with limited facilities such as a simple cage, a small amount of food scraps, and no diseases prevention program. Rearing of local chickens faced various problems relating to social, financial and management system. Village chicken breeding is completely uncontrolled and replacement stock produced through natural incubation using broody hens.

In another study, reported that 55% of chicken owner farmers in East Nusa Tenggara Province had the tradition of selecting cocks for breeding stock. Therefore, there is a need to improve the management system of rearing chickens village. Semi intensive chickens rearing system is one of the methods in reducing various problems and improving performance and production of chicken village in Nusa Tenggara Province. Good ventilation, lighting, temperatures, feed and water quality, and diseases prevention are a must in chicken management. Such good practices are complementary to effective phenotypic expressions. Some local chickens in East Nusa Tenggara Province Indonesia are well-adapted to local environmental conditions but exhibit slow growth rate, other local chickens are not well-adapted to local environmental conditions but exhibit rapid growth rate and high egg production. Crossbreeding of both local chickens can therefore be used as a strategy to improve growth performance of local chickens in East Nusa Tenggara Province Indonesia. system. Cross breeding with or without genetic selection in the parent lines through up grading by repeated back crossing to a superior parent breed can be expected to improve genetic.

Small-scale intensive chickens rearing system is also one of the methods in improving performance and production of chicken. Community services for the small scale chicken farmers could be applied, such as training, workshop, demonstration and application programs in feeding management system, housing management system, and diseases prevention management system. The findings of the study clearly revealed that the community services programs was very essential tool for profitable and sustainable local chickens farming system in one of the village in East Nusa Tenggara Province. In East Baumata village, local chickens are raised using traditional production techniques. They are a side-line activity and are not considered the main source of family earnings. The members of a family generally work in crop cultivation, as laborers, or as traders. Smallholder family poultry is affected by many technical factors including low bio-security, inadequate sources of inputs and services especially sources of technical information.

The free-range or scavenging system results in high chick mortality. The productivity and profitability of this sector, is affected more by knowledge poverty and a non-supportive educational system which looks down upon smallholdings and provides a negative incentive to their development. Local chickens are provided with limited facilities such as a simple cage and fed scavenged from the free range includes (68%) grains, (21%) kitchen waste, (2%) food residue and (2%) termites. There was still a lot of ignorance about the nutritional quality of the diet which determines productivity based on adult weight, eggs/year, hatchability and age at lay. Five to 12 eggs are brooded by hens in each clutch and the chicks are raised for three months. Losses of young chickens can be high, sometimes reaching 100 percent. Under this production system, farmers get small benefit from selling or consuming the chicken. The additional revenue from local chickens is unpredictable, and the chicken activity is considered to be a part of family savings.

Therefore, there is a need to improve the management system of rearing local chickens. Small-scale intensive chickens rearing is one of the methods in reducing various problems and improving performance and production of chicken village in Baumata.

## **METHODS**

The methods used to teach the community for the improvement of management practices of keeping local chicken were by technology application program through the training program, workshop, and demonstration. Regional Training Stations were established for the local chickens to provide practical experience for community to support the theory from the training or workshop program. Initially a group of up to ten interested people were identified within the area and then a suitable trainer given a training program. The trainer after completed each training lesson, then provided hard copy material for a group. The practical components of the training be delivered through the use of suitable existing facilities within nearby communities or by establishment of each person own chicken project during the training. Training program provided modern techniques for profitable and sustainable chicken farming. Technical assistance for farming was provided to the trained farmers during the production period. Monthly technical meeting was organized with the trained farmers to know problems faced by the farmers and the discussion was conducted in the meeting to increase their skills and awareness for effective farm management and bio-security.

Considerable care is given to the chickens, including vaccination. Young chicks are given two weeks of full feeding after separation from the hen. In semi intensive system, the chickens allowed to scavenge in the backyard or in the garden after morning feeding and were then brought back to their cages in the afternoon. Eggs and meat from young and culled chickens were produced in this system. In intensive farming system, chickens were kept in cages with a full feeding program throughout the production period. The cost of this system

was high because of the capital investment for cages, the cost of young pullets and commercial feed, and the amount of labor required.

## RESULTS

The result of the programs which applied to farmers in Baumata village showed that the performance and production of local chicken increasingly improved. Mortality rate of local chickens was only 15%, decreased up to 50% percent compared with the mortality rate before the programs. Before the program, diseases still constitute the highest (59.9%) cause of losses in productivity of the village chicken in Baumata village. When there was an outbreak of a disease among local chickens, the farmers either intervene by slaughtering, selling, treating, or they did not intervene at all, which resulted in more losses in profitability and greater spread of disease among the chickens.

In spite of the great economic loss that diseases constitute, many farmers in Baumata village still did not vaccinate their chickens. The reasons usually given for not vaccinating chickens include ignorance of the existence of vaccines against poultry diseases, ignorance of where to get the vaccines or ignorance of the cost-benefit ratio of the vaccine. At the village level, this require a community-based approach, because in situations where poultry are free ranging, their protection depends as much on the actions of the keeper.

In terms of body weight of chickens, there was an increase more than 50% in average body weight of local chickens compared with the average of body weight before the study. Keeping the chickens in cages provided with feed, water and medicine decreases mortality and increases productivity. It was reasonable also into using some cheap unconventional feeds.

## CONCLUSION

It can be concluded that increasing the productivity of local chicken farming sustainably is important for economic well-being as well as for ensuring food security and nutrition. Increasing local chicken productivity through good feeding management, well adapted housing management, preventing diseases management, and good marketing management. Improving efficiency of feed use in feeding management, eliminating use of toxic chemicals. Also could be by enhancing all forms of promoting indigenous and sustainable farming. Improved access agricultural extension services, for all, including smallholders, women, indigenous peoples and local communities. increased investment and support to research and development on sustainable agricultural technologies.

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## REFERENCES

- Conroy, C., Sparks, N., Acamovic, T., Joshi, A.L. and Chandrasekaran, D. (2004). *International Network for Family Poultry Development Newsletter Vol. 14, No. 1*, January-June 2004:10-15. <http://www.fao.org/ag/againfo/subjects/en/infpd/home.html>
- Dahouda M, Toleba, S.S., Youssao, A.K.I., Bani Kogui, S., Yacoubou Aboubakari, S. And Hornick, J.-L. (2007). *Family Poultry* **17 (1&2)** : 3 . 14. [www.fao.org/ag/againfo/subjects/en/infpd/home.html](http://www.fao.org/ag/againfo/subjects/en/infpd/home.html)
- Ershad S. M. E., Islam S. S., Mondal S. C. and Sarker B. (2004). Efficiency of trained farmers on the productivity of broilers in selected areas of Bangladesh. *International Journal of Poultry Science*, **3** (8): 503-506.
- Ismat Ara Begum (2005). An assessment of vertically integrated contract poultry farming: A case study in Bangladesh. *International Journal of Poultry Science*, **4** (3):167-176.