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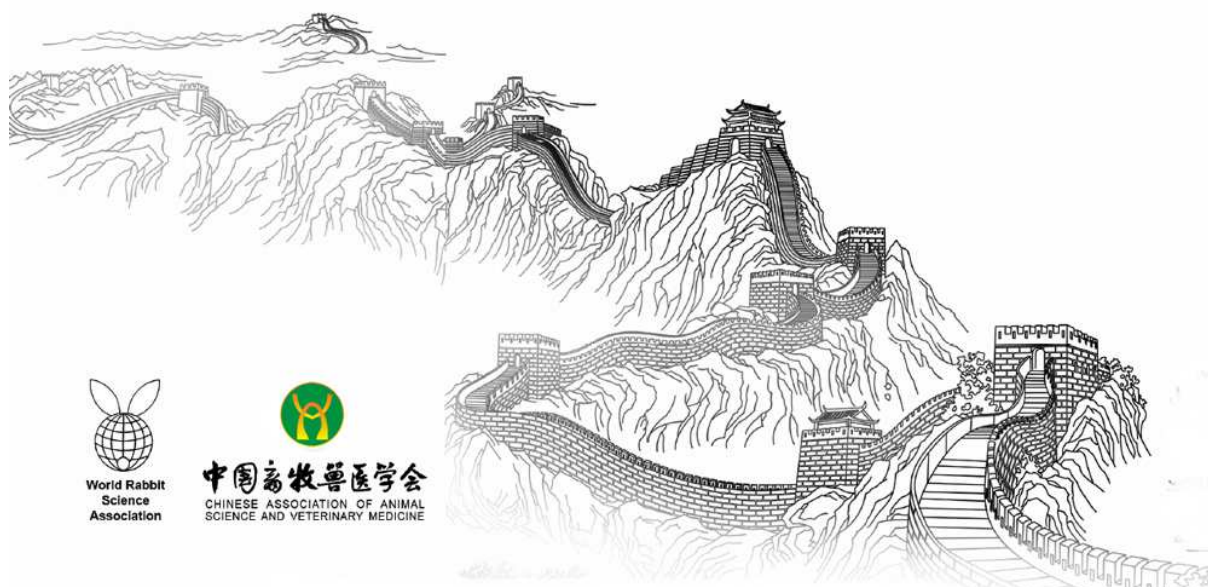
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RABBIT PRODUCTION IN NEPAL: A SOLUTION TO FOOD INSECURITY AND POVERTY

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ABSTRACT

Nepal ranks amongst the most food insecure and severely malnourished countries in the world. This status poses a real threat to development, which has been exacerbated by the recent earthquake and the economic blockade. Monetary and technical contributions from the WRSA, French RSA, Rotary Club International, and Texas A & M University-Kingsville (TAMUK) have been used to rebuild and expand rabbit projects for rural poor, including earthquake victims. This support is reviving The Himalayan Rabbit Farm and promoting the development of rabbit farming to address the issues of food security and malnutrition. The objective of this paper is to report on progress to date. Initially, 50 earthquake affected victim families will be provided with training and back-up technical support and breeding stock loans, including access to market opportunities for their surplus rabbits. It is envisaged that this project will become a model for the promotion of rabbit farming in other areas of Nepal to enhance widespread project multiplication.

Key words: Food security, Malnutrition, Rabbit production, Sustainability, Nepal

INTRODUCTION

Nepal is amongst the most food deficit and least developed countries in the world. With a population of 27 million and a growth rate of 2.2 percent, it is estimated that the population will reach 40.5 million by 2025 (NeKSP, 2015). This trend will exacerbate the food deficit situation if timely and proper interventions are not carried out. In 2014, mean annual income was only 730 USD (World Bank, 2016). More than 65.6% of the total population are engaged in agriculture; livestock contribute to 30% of agricultural GDP (i.e., this sector is projected to rise to 45% by 2015; MOAD, 2012). Following the aftermath of the disastrous earthquake in May 12, 2015, a study conducted by the District Food Security Network (DFSN) classified 224 Village Development Committees (VDCs) in 11 districts as highly food insecure (Phase 3) with an estimated 500,300 affected people. Likewise, 329 VDCs in 23 districts were classified as moderately food insecure (Phase 2) and another 3,360 VDCs and municipalities were classified as minimally food insecure (Phase 1). In response to this disaster, monetary support from the World Rabbit Science Association (WRSA) and the French Rabbit Science Association was received to reconstruct the breeding center of The Himalayan Rabbit Farm, which in recent years had provided training, technical support and breeding stock for rabbit project expansion. A humanitarian monetary gift from Rotary Club International was also received to address the nutritional needs and secure income for the earthquake victims by engaging them in a formal 1-year rabbit project.

The objective of this paper is to share with the WRSA membership an update with regards to how this project aims to address malnutrition and food security issues through rabbit farming for targeted communities in Nepal, as well as to report on preliminary progress.

MATERIALS AND METHODS

Project Rationale

According to the Centre for Bureau of Statistics (CBS, 2014) per capita GDP of Nepal is NRs. 69,919 (752 USD; Exchange rate of 1 USD = 93 NRs) and only 40% of the population are food sufficient. Nepal ranks in the 3rd position among countries in South Asia with the highest level of malnutrition (WHO, 1988-2004; FAO, 2010). Some 49.3% of the populace show signs of stunting (20% are severely stunted), 12.6% are wasting (3% severely wasted), and 38.6% are underweight (11% are severely underweight and 24% of women are underweight (GON, USAID, New ERA and Macro-International, Inc., 2007). Lack of a nutritious diet for children under five is a serious underlying cause of malnutrition-stunting, wasting, and underweight problems (Pokharel et al., 2009).

As a solution to hunger, rabbit production can be established locally on small farms with low start-up costs and is a sustainable means for low income families who are victims of poverty and food insecurity. Further, it reduces the dependency on expensive off-farm inputs such as commercial feed and fertilizer. Promotion of local fodder production in plots and recycling of manure are practices that are key to production success. Utilization of rabbit by-products such as skins for manufacturing of leather products together with sales of surplus meat creates opportunities for income generation in poor communities.

Support to Revive the Rabbit Breeding Farm and Assist Earthquake Victims

Financial support from the World Rabbit Science Association (WRSA) and the French Rabbit Science Association (4,000 USD) have been utilized for the (re)construction of the damaged facility and cages at The Himalayan Rabbit Farm. This training and demonstration centre has been used in previous years to promote rabbit farming to people from various areas who were affected by malnutrition and poverty. A project sponsored by Rotary International to support earthquake-affected families is being implemented for 50 families (125 USD investment per family) that involves technical training and breeding stock (3 does and 1 buck). Implementation of this project is being undertaken by The Himalayan Rabbit Farm staff under the technical support of Texas A & M University-Kingsville (TAMUK) and the Nepal Agriculture Research Council (NARC), Khumaltar. Nutrition and income status of the targeted community, before and after project implementation, will be gathered through household surveys. Farmer will also receive special training to establish forage plots involving local plant species and including hydroponic cultivation of barley and wheat sprouts. This innovation will be made under the active participation and supervision of the project management team, Nepal Agriculture Research Council, and regional forage experts.

Assessing Existing Status and Preparing Plans to Address Problems

As a project goal, rabbit farming will be introduced as a strategy for families to fulfill their nutritional and economic deficiencies by developing healthy habits of rabbit meat consumption and by selling surplus rabbit to generate income. Nutritional status of households will be assessed with the involvement of nutritionists who will develop plans to fulfill nutrient requirements for each family member through training of women on how to prepare regular diets.

Facilitating Production and Providing Essential Services

Essential services for rabbit production includes first the provision of technical training on establishing forage plots, rabbit hutch construction, rabbit farm breeding and management, manure recycling, skin processing, etc. With these skills and basic knowledge, farmers will be able to adopt a sustainable rabbit production model and later gain entrepreneurial opportunities to generate increased income to better provide for their families. Processed skins will be sold to leather companies to manufacture attractive leather-based products. In addition, manure will be recycled on farms to avoid dependency on chemical fertilizer in order to produce organic vegetables which will be sold to further increase income.

Stimulating market demand and assuring steady markets is also critical to project success. Rabbit meat products will be labelled with information on its nutrient composition and recipes. Rabbit recipes will be developed by involving chefs from renowned hotels and restaurants and hotel management institutes. Labels with recipes should boost sales of rabbit meat at meat shops and eateries. In addition, product labels will provide a brief story of how the purchase will contribute to generating more income for farmers who were earthquake victims. An effort will also be made to develop diversified products such as rabbit jerky involving seasoning with flavored spices produced from the foothills of the Himalayas so as to attract a wide range of customers.

RESULTS AND DISCUSSION

Anticipated Project Impact

Due to the strong potential for rabbit production in Nepal, projects are being introduced in more than 35 districts under the auspices of the Nepalese Government. Households for rabbit farming have been identified through field visits, rigorous discussions with local organizations active in the regions, based on the community's needs and interests. More than 80% of participants are women who were already familiar with livestock, such as goats and chickens. Initially, 50 targeted families were divided into two groups and provided with a series of training lessons, practical demonstrations, and monitoring activities. They were provided with technical support on rabbit farm establishment, hutch construction materials, and breeding stock (3 does and 1 buck). With an expected minimum of does producing four litters per year, 60 total fryer rabbits should be produced according to the SSRPM (Lukefahr, 2010). Assuming 2.5 kg of a live fryer and at the market price of Rs. 300/kg, a family could earn Rs. 45,000 (484 USD). If a family consumes 36 rabbits and sells 24 rabbits, they can significantly boost their meager salary. Later, farmers are expected to increase to 10- and 20-doe operations to increase benefits.

Rabbits produced by families will be sold live or processed to The Himalayan Rabbit Farm who is presently active in stimulating the market demand in the Kathmandu vicinity. Proper meat packaging and labels showing nutrient content, recipes, and information on the farmers who produced the meat will be done as a branding strategy. In order to create growing demand for rabbit meat, market surveys are being conducted to determine effective promotional and consumer preference strategies. In addition, a variety of rabbit dishes are being developed and tested using taste panels, and being rigorously promoted at farmer's markets and meat stores as a marketing tool.

Rabbit Production – Feed Security is Key

A key to production success is the primary utilization of forages that meet rabbit's nutritional needs (Lukefahr, 2010). Critical nutrients are available from a variety of forage grasses and legumes, crop by-products, and fodder that could be harvested in plots or in open pastures or on uncultivated land or in forests. Out of the total 14,784 thousand hectares of land in Nepal, pastures and forests consist of 11.9 and 42.8%. About 6.7% of uncultivated land and 11.9% of open pasture land can be utilized for fodder production (Upreti, 2006). The Himalayan and other mountainous regions consist in 80% pasture land. Huge supplies of forage exist for livestock production. Crop residues and by-products, such as straws from millet, pulses, and rice, as well as corn stover and brans from different cereals and legumes are available. Because of the abundant availability of trees and timber from the forests and bamboo products, local materials for the hutch construction are available and are presently being used by project participants.

Rabbit Meat Consumption- A Developing Trend

Although there are no religious taboos against the consumption of rabbit meat, because of the lack of availability and awareness of rabbit meat, it has been limited to the general populace. In some areas, people consume rabbit meat as a regular source of animal protein and as a cure for certain diseases such as asthma. Through recent project efforts, the introduction of rabbit meat into the menus of some famous

restaurants is now attracting more customers. A recent survey was conducted to measure the response from meat tasting at different exhibitions and formal training programs. Out of all participants surveyed, more than 90% of consumers ate rabbit meat for the first time. More than 90% ranked rabbit meat as the best among the other available meat options. Also, the majority of people surveyed were willing to buy and suggest to others to buy rabbit meat if available.

CONCLUSIONS

Development of a poor country like Nepal poses a huge challenge in terms of solving food insecurity and poverty issues. There is a need to design and promote an integrated program that helps to optimize the local natural and human resource base and build the capacities of rural farmers through rabbit projects. To encourage the engagement of entrepreneurs in the rabbit sector, profitability should be increased by improving the productivity of the rabbits by improving the feeding, general management and undergoing genetic improvements. In addition, creating awareness among the producers and consumers about the nutritive value of rabbit meat should be done and key policy interventions should be undertaken to create and establish a viable rabbit industry in Nepal. Support from WRSA and the French Rabbit Science Association involving donations of 3,000 and 1,000 USD, respectively, as well as from generous donations of individuals, have been used to rebuild The Himalayan Rabbit Farm after the devastating earthquake. This aid will reactivate the role of the Farm in helping to train farmers and provide breeding stock and follow-up technical support to low income farmers. A project has been initiated through a grant of 10,000 USD from Rotary International and with technical support from Texas A & M University-Kingsville. The goal to improve the lives of families who were earthquake victims is being realized through rabbit projects as a source of nutrition and supplemental income. It cannot be overstated that families are highly appreciative to all donors, including the WRSA.

REFERENCES

- CBS. 2014. Nepal Living Standards Survey 2003/04, *Statistical report. Volume 1 and 2. Kathmandu. National Planning Commission, Central Bureau of Statistics. Kathmandu.*
- FAO. 2010. Assessment of Food Security and Nutrition Situation in Nepal. (*An input for the preparation of NMTP for FAO in Nepal*), Pulchowk, Nepal.
- GON, USAID, New ERA and Macro-International Inc. 2007. Nepal Demographic and Health Survey 2006. *Population Division - Ministry of Health and Population, Government of Nepal Kathmandu; New ERA Kathmandu, Nepal; Macro International Inc., Calverton, Maryland, U.S.A.. May 2007. Kathmandu.*
- Lukefahr S.D. 2010. Developing Sustainable Rabbit Projects, *Heifer International. Little Rock, AR, USA. pp 97-99.*
- MOAD. 2012. Statistical Information on Nepalese Agriculture, *Agri-Statistics section, Agri-Business Promotion and Statistics Division, Ministry of Agricultural Development (MOAD).*
- NeKSAP. 2015. Nepal Food Security Bulletin *Issue 45. Nepal Khadya Surakhsya Anugaman Pranali.*
- Pokharel R. K., Houston R., Harvey P., Bishwakarma R., Adhikari J., Gartoulla R. 2009. Nepal Nutrition Assessment and Gap Analysis (Draft report). *Kathmandu.*
- Upreti C.R. 2006. Nutrient Contents of Feeds and Fodder in Nepal. PP 2. *Animal Nutrition Division, NARC, Kathmandu, Nepal.*
- World Bank. 2016. <http://data.worldbank.org/country/nepal>. Accessed: January 25, 2016.

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The Message

- The April 2015 earthquake and economic blockade exacerbated the already severe food insecurity and development prospect of Nepal.
- Promoting the development of rabbit farming among earthquake-affected families and communities has the potential to address food security and malnutrition issues.
- Training on rabbit farming, back-up technical support, breeding stock loans, and access to market opportunities fosters income generation and nutritional needs.

Introduction

- Rabbit production can be established locally on small farms with low start-up costs as a sustainable means of reducing hunger for low income families who are victims of the earthquake and poverty using the Small-Scale Rabbit Production Model.
- This model can reduce the dependency on expensive off-farm inputs such as commercial feed and fertilizer.
- Utilization of rabbit meat by the communities and selling of the surplus meat and other by-products creates opportunities for income generation.

Our work aims to develop a model for the promotion of rabbit farming in Nepal to enhance widespread project multiplication.

Methods

- Support to revive the central rabbit breeding farm and assist earthquake victims
- Assess the existing status of target participants and prepare plans to address their problems
- Facilitate the implementation of the technical delivery package and provide essential services.

Step-I

Reconstruction of the central breeding facilities of The Himalayan Rabbit Farm

Step-II

Assessment of existing nutritional and economic deficiencies and develop healthy habits of rabbit meat consumption and generate income by selling of surplus rabbits using the Small-Scale Rabbit Production Model

Step-III

Texas A & M University and Nepal Agriculture Research Council provides technical assistance and The Himalayan Rabbit Farm provides essential services and market access

Results

Increased Income

With 3 does + 1 buck = 60 rabbits produced in a year

Market assurance of the products

Key to food security

Utilization of open pastures, uncultivated land or forest for forage production and crop-residues and by-products

Easy-to-construct hutches from abundantly available bamboo and timbers

Market development-rabbit consumption

No religious or traditional taboos for its consumption

Creation of awareness of health benefits and introduction of rabbit dishes in famous restaurants will create market demands



Conclusions

- Rabbit farming offers a sound solution to address the food insecurity and poverty issues in Nepal and other LDCs
- The integrated model approach optimizes the local natural and human resource base and build capacities of rural farmers
- Strategies to improve the productivity and profitability through improvement in feeding, general management and genetic improvements are also aimed to address gender issues (promote role of women in development) attract the rural youth into this sector to discourage migration to urban areas
- Awareness of rabbit farming among producers and consumers about the nutritious aspects of rabbit meat must be done
- Key policy intervention is also critical to establish a viable rabbit industry in Nepal

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