JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue
JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)
An International Scholarly Open Access, Peer-reviewed, Refereed Journal

RESILIENT STRATEGIES FOR SUSTAINABLE DEVELOPMENT THROUGH APICULTURE

Nisha V. Warade
Department of Zoology, Shankarlal Khandelwal College, Akola, Maharashtra, India

Abstract:

Nowadays, it is very difficult to get a job and become financially sound to satisfy one's daily needs. This economically backwardness is a major challenge which today's youth is facing. Generation of secondary income source apart from agriculture and forestry can be helpful in reducing this economic stress and strain on them. India has varied cultural and geographical heritage, which can be used in favor of generating secondary income source in different areas and states of India. Apart from other agro based enterprises which today's stakeholders are imbibing, one very potential enterprise is beekeeping. To make the stakeholders financially independent apiculture is one of the enterprise which can generate income. The youth and women of rural area who are facing this financial problem can lessen it by adopting apiculture. This beekeeping enterprise has a bright prospect for all the stakeholders. The second resource it is important that all the stakeholders should be given proper training of beekeeping and processing of secondary bee products. All the stakeholders should be given information regarding the various government schemes regarding beekeeping so that they can generate more income from less investment and improve their livelihood. This enterprise will also help in environment conservation and sustainable development.

Key words: Apiculture, sustainable, beekeeping

Introduction:

Today, beekeeping is an important, sustainable and integral agricultural activity under the rural development program in India, since it provides nutritional, economic, and ecological security and balance. The knowledge of agroclimatic conditions, the diversified flora, changing agri horticultural pattern of the crop, the types of bees, the management practices etc play a pivotal role in transforming the beekeeping industry in the country Beekeeping not only augment family income of farmers and native communities from bee products but also motivate them in the protection and development of biodiversity. It is a business opportunity with social economic, and ecological benefits that requires minimal time, money, labor and resources. It is concluded that rural income and standard of living will increase if villages turns into centres of honey production, purification and marketing.

Apiculture today is the scientific management of a natural phenomenon covering broad spectrum of areas including research and technology development to economic advantages It is an agro based enterprise, which is a management system that combines the production of agricultural crops, with bees and/or other resources in the same area and which farmers can take up for additional income generation. Beekeeping aims to increase or sustain productivity while maintaining ecological stability, as the honey bee does not compete for natural resources with any other agricultural enterprise They act as micromanipulators to harvest nectar and pollen from plant sources to produce honey and store it in beehives. It is a business opportunity with social, economic, and ecological benefits that requires minimal time, money, labor, and resources. Beekeeping plays a valuable part in improving rural livelihoods especially to forest dependent people in many developing countries [11, 15].

B ees are an integral part of our lives and without them life would take a very different turn. There are well around 25,000 bee species in the world. The bees provide important natural products and services. The bees pollinate flowers and therefore plays an important part in food production. Most plants are totally dependent on certain types of bees for reproduction. It is also for this reason that commercial pollination has begun to take shape in the larger agricultural industry Of all the bee species, the honeybee is the most economically valuable as it is able to focus on particular plants at a time. It does not pollinate randomly because it targets particular plant species in every outing. A single honeybee can pollinate thousands of flowers daily

Honey bees occur in nature as wild insects. However, because of their high economic importance, the honey-bees, especially. A mellifera and A florea are domesticated and cultured, viz. reared and bred in artificial hives.

Apiculture has a potential perspective for rural development There is a demand for honey and other bee products and hence there is a need to motivate traditional beekeepers to adopt modern and scientific beekeeping practices in order to increase the productivity of apiculture. There is a need to motivate the unemployed youth to take up beekeeping enterprise as a means of self-employment and sustainable economic source for Improvement of livelihood standard [16]

Collecting honey from wild bees from the forests has been in existence from a long time. Due to such type of traditional method of honey hunting many colonies of wild bees are destroyed. This has disastrous consequences for our biodiversity and ecology. Moreover, now a day, due to urbanization and de-forestation. procurement of natural or pure honey is becoming difficult The understanding of the colonies and biology of bees allowed the construction of movable comb hives so that honey could be harvested without destroying the entire colony. Instead of traditional honey hunting, beekeeping as a livelihood had been introduced in many parts of world as early as the 70's and today there are quite a number of countries that are engaged in beekeeping The main source of income for apiarists is from the sale of honey and beeswax Some people also provide bees on a rental basis to farmers and orchardists for pollination Pollination fees can be an important source of income for some commercial beekeepers The pollination service delivered by the bees to our ecosystem is 20 to 117 times more valuable than the financial worth of all beekeeping production To all pollination done by insects, bees contribute by 70-80% The bee enhances yield of crops upto 30% - 40% by increasing pollination. The presence of managed pollinators can increase quantity and improve quality of fruit yield in honeysuckle and various orchard plants [5.6.10] Pollinators provide essential ecosystem services that contribute to the maintenance of biodiversity and the survival of plant species, including crops that offer food security to numerous households 1201 Dwarf honey bees (Apis florea F.) are excellent pollinator of various economic crops and forest plants, and they have a wide foraging range, thus leading to an improved regeneration of trees and promote a good floral diversity. In that sense, beekeeping is important for maintaining our ecosystems in equilibrium.

It also helps to increase income for improved quality of life Beekeeping will not only augment family income of farmers and indigenous communities from bec products but also motivate them in the protection and development of biodiversity Beekeeping was ranked number one at the same level as agriculture as major sources of income [12]

Now-a day young people are facing increasingly fewer opportunities to contribute to their community's development and degradation of their environments Bee keeping is an economically sustainable occupation, offering attractive avenues for self-employment with multiple benefits. Participation of rural women and youth in beekeeping activities provides a unique opportunity to improve rural livelihood and hence poverty reduction [12] The growth of the beekeeping industry, will help to overcome the growing unemployment rate in recent years This activity has potential to provide regular income especially in agricultural areas. Apiculture has the ability to generate economic, social and environmental value simultaneously

It is an important income-generating activity, which has a great potential for development [20] Beekeeping can be done by all ages and gender and requires relatively low capital and does not require daily

attention [11]. Participation of women and youth in beekeeping activities provides unique opportunities for the women and youth to contribute to their livelihood [11]. Beekeeping contributes up to 33% of household income in the miombo woodlands of Tanzania [19] and it employs about 2 million rural people [15]

In order to increase income from beekeeping activities, promoting and support of training on processing of secondary bee products to women and youth beekeepers are important Stakeholder's involvement in promoting and support beekeeping awareness campaigns is crucial to enhance the contribution of the sector for livelihood improvement and environmental conservation [12]

Apicultural practices towards rural income can be viewed as a means of cradicating poverty in developing countries [13,14,18] Using primary data collected through structured questionnaires, Chazovachu et al. (2012) concluded that food, income in form of cash, employment and scenery creation for tourism are major benefits derived from apicultural practices in Chitanga village of Mwenezi district of Zimbabwe Bradbear (2009) on the other hand concluded that beekeeping does not require expensive equipment, as simple hives can be made from local materials by local artesian. Ajao and Oladimeji (2012) assessed the contribution of apicultural practices to household income and poverty alleviation in Kwara state of Nigeria. Qaiscret al (2013) conducted an impact assessment of beekeeping in sustainable rural livelihood in Chakwal and Sargodha in Pakistan. Relying on descriptive statistics, apiculture was found to increase keepers' income. Saha (2002) conducted an exploratory study in Bangladesh and concluded that beekeeping is a proven technology as a good profitable venture requiring small investment of capital and skilled labor and high yield in comparison to other poverty reduction activities.

To alleviate the problem of poverty in rural areas, looking for alternative technologies that too which are environment friendly are crucial. Introduction of improved beekeeping technologies is an alternative income generating activities which can be appropriate solution for sustainable development [2]

Conclusion:

1 Beekeeping requires less time, money and infrastructure investments.
2 Honey and bee wax can be produced from an area of little agricultural value.
3 Due to the important role of bees in pollination, beekeeping increases the yield of certain crop and fruit plants.
4 Rural economic activities will increase if villages turns into centres of honey production, purification and marketing
5 It can be taken up by women, youths, farmers as a hobby or on commercial basis.

References:

1. Adgaba Nuru, Awad M. Awad, Ahmad A. Al-Ghamdi, Abdulaziz S. Alqarni, Sarah E. Radloff (2012) Nectar of ziziphus spina-christi(1) Wild (rhamnaceae) dynamics of secretion and potential for honey production Journal of Apicultural Science,56 (2)

2 Admassu Addi and Debissa Lamessa. (2008) Bee plant inventory and the Beekeeping potentiality of Menagesha Suba state forest Journal of Biological Society of Ethiopia.

3. Ajao, A.M. &. Oladimeji, Y. U. (2012) Assessment of contribution of apicultural practices to household income and poverty alleviation in Kwara state, Nigeria International journal of science and nature. I.J.S.N., VOL 4 (4)2013:687-698

4 Ball D. W. (2007) The chemical composition of honey J Chem 1643-1646 Educ. 84:

5 Bieniasz M. (2007) Effects of open and self-pollination of four cultivars of high bush blueberry (VacciniumcorymbosumL) on flower fertilization. fruit set and seed formation. J Fruit Ornam Plant Res., 15. 35-40

6 Bozek M. (2012) The effect of pollinating insects on fruiting of two cultivars of Loniceracaeruleal Journal of Apicultural Science, 56 (2)

7 Bradbear, N. (2009) Bees and their Role in Forest Livelihoods Food and Agriculture Organization of the United Nations

8 Chazovachii, B., Chuma, M., Mushuku, A., Chirenje, L., Chitongo, L. and Mudyariwa, R., (2012). Livelihood resilient strategies through beekeeping in Chitanga Village, Mwenezi District, Zimbabwe. Sustainable Agricultural Research

9. Chen L., Mehta A., Berenbaum M., Zangerl A. R., Engeseth N. J. (2000) Honeys from different floral sources as inhibitors of enzymatic browning in fruit and vegetable homogenates. Agric. Food Chem., 48: 4997-5000

10. Denisow B. (2005) The variability of yield structure of black currant cultivars (RibesnigrumL) in different pollination conditions. Apiacta [online] www.apimondia org/apiacta/slovenia.

11. Food and Agriculture Organisation (FAO). Bees and their role in forest livelihoods A guide to the services provided by bees and the sustainable harvesting, processing and marketing of their products Non-Wood Forest Products No. 2009, 19:194.

12 Free J. (1981) Biology and behavior of the honey bee Apis florea, and possibilities for beekeeping. Bee World 62 (2): 46-59

13. Goldenberg, D. (2004). Honey Gospel Beekeeping converts poachers in Zambia. Wildlife Conservation 107 (2)

14. Lalika, M. C. S. (2009). Beekeeping for Income Generation and Costal Forest Conservation in Tanzania. Bees for Development Journal, Vol 88 Pp 4-6

15. Mapolu M. (2005) Beekeeping in Tanzania, An Overview Forestry and Beekeeping Division, Ministry of Natural Resources and Tourism 8:1.

16. Marngar D. and Lyngdoh R. D. (2014) Apiculture, An alternative income generation in Meghalaya. Ind. J. Sci. Res and Tech. 2(5):90-93 17. Michener C. D. (2007) Bees of the world. The John Hopkins Uni Press. Baltimore & London, pp. 1-992

18 Mickels, G (2006). Small-scale Woodland-based Enterprises with outstanding Economic Potential: the Case of Honey, National Library of Indonesia Cataloging-in-Publication Data

19. Monela GC, Kajembe GC, Kaoneka ARS, Kowero GS. (2000) Household Livelihood Strategies in the Miombo Woodlands of Tanzania. Emerging Trends Tanzania Journal of Forestry and Nature Conservation 73.17-33

20. Morse R. A., Calderone N. W. (2000) The value of honeybees as pollinators of US Crops in 2000. Bee Culture, 128: 1-15.