

FOREST-DEPENDENT COMMUNITY DEVELOPMENT THROUGH *APIS CERANA* BEEKEEPING PROGRAM

A. AMIR, U.M. YAYASAN PENGEMBANGAN

Jakarta, INDONESIA

I. Background

Indonesia's forest integrity has been long under pressure from various courses. The expanding scale of human activities including those of living inside and/or outside the forest areas contribute at differing degrees to the alarming pace of forest degradation and destruction. But the effects of forest-dependent community's actions are aggravated by lack of understanding by the dominant industrial cultures of outsiders and less sufficient regulatory instrument imposed by the government upon them. The government alone has limited resources to provide alternative sources of income for the forest-dependent people who have very little or even no choice other than utilizing the forest resources for the fulfillment of their livelihood.

This paper explores the potentials of an approach which is attempting to address the need of the forest-dependent people, namely, through *Apis cerana* Beekeeping Program. The program emphasizes local participation and stock of social capitals, and combine forest conservation and development at the same time. A *participatory and emancipatory approach* that assures local people's well being as well as the integrity of the forest is employed. It is here believed that local people represent significant human resources in terms of their knowledge of their forest, their organizational capabilities, their institutions, and their creativity in the effort to develop themselves without sacrificing their forest.

It is further argued that *Apis cerana* is much more manageable, in comparison with other bee species, particularly for forest dependent people. *Apis cerana* bees visit all kind of flowers especially for pollen. With continued provision of bee forage and proper management, *Apis cerana* is more than promising for forest-dependent people. *Apis cerana* produces proportional yield of honey of about 15-18 kgs annually, in accordance with the size of its body, and depending on the continuity of the bee forage.

In Indonesia, *Apis cerana* lives everywhere, and can be freely caught from the wild and easily cultured. Unfortunately, not many people understand how to keep the bees properly.

For forest dependent people, particularly those entitled to the concession of 25 years of "community forest" (Hutan Untuk Kemasyarakatan/HKM) of approximately 50-100 hectares, *Apis cerana* beekeeping can constitute an alternative income source as well as prevent forest dependent people from exploiting forest resources. Planted with *Calliandra calothyrsus* Meisin, *Sesbania grandiflora* and *Acacia mangium*, the community forest of such size can create a conducive environment for *Apis cerana* to produce honey optimally.

It is apparent that these trees including *Calliandra calothyrsus* Meisin with red flower, after eight months, produces medium source of nectar and minor source of pollen, and *Sesbania grandiflora*, with red, violet and white flowers, after six months, produces medium source of nectar and pollen nearly all the year round. In addition, *Acacia mangium*, since the first growth of its leaves, produces honey dew.

II. Problems and justifications

The common problems that have persisted over the past several decades in Indonesia in relation to the forestry sector and the people dwelling in and/or around the forest can be briefly outlined as follows:

- The people who live in and/or around the forest area often do not have sufficient alternatives, except going to the forest to cut the trees, partly for fuel and for sale in order to fulfill their basic needs, such as food, cloth, payment of the school fee for their children, and so on. Despite of the application of the environmental law, which clearly stipulates the sanctions and penalties for those who exploit the forest resources illegally, the degree of forest degradation has not significantly decreased. Even those who have been sanctioned for cutting trees illegally keep their supposedly "wrong doings", because they do not have any other alternatives for their survival.
- Forest dependent people do not have any knowledge of their rights to possess "community forest" which can be utilized for productive effort, thus for generating their incomes. At the same time, particularly during the Soeharto's New Order period, the government was less than keen to encourage the forest dependent people to acquire their entitlements to the available community forest. On the other hand, the government easily issued forest concessions for large industries/tycoons who were said of being able to utilize the forest resources optimally with their mountainous capitals.
- In reality, the dominant industrial cultures of the outsiders have not only become the dominant contributors to the devastating destruction of the forest, but more than that, they have created a

conflictual relationship with the people living in and/or around the forest areas and brought about negative impacts on the environmentally friendly cultures of the local people. All this is yet to mention the alienation of the local people and their decreased opportunity for the possession of "community forest" for generating their incomes.

- Despite of all the aforesaid problems, since the monetary crisis hit the country in 1997 leading to the fall of the aging President Soeharto in mid 1998, the privileges given to the large tycoons, especially those considered as inner circle or cronies of Soeharto's empire, have been significantly reviewed, if not erased at all. The current government, though still being reluctant to do so, has very little choice other than undertaking substantive reform in the forestry sector. The reform era combined with the Indonesia's fledgling democracy has forced the government to shift from its industrially oriented paradigm to community-based approach. The pendulum has swung radically to the side of the local people who have been over the past several decades marginalized from the attainment of fruits of forestry development in the country.

III. SWOT analysis

In order to explore the potentials of *Apis cerana* beekeeping, for the forest dependent people, in particular, SWOT analysis is employed in this paper, as highlighted below:

Strengths

- *Apis cerana* is naturally self-problem solving, especially in defending itself from the attack of *Varroa jacobsoni*; which commonly happens;
- The supply of nectar and pollen from *Calliandra c. M* and *Sesbania g.* is available nearly all the year around;
- There is no need for moving the bee colony from one to the other places with the availability of bee forage along the year. Therefore, it is more efficient for the forest dependent people in managing the bee colony;
- It is easy to get *Apis cerana* bee colonies for free around the forest because of its availability in large quantity;
- The forest dependent people already known the use and benefits of honey such as for healing the new wound and stomach problems etc.;
- The forest dependent people is usually easily trained in bee culture;
- The honey that has been produced can generate income for the forest dependent people;
- The leaves of *Calliandra c. M* and *Sesbania g.* can be used for animal feeding: its wood for fuel and the *Acacia m.* of over 5-6 years of age for export for pulp;
- There is no need for a large amount of capital to "start-up" the modern apiary operation which requires hive, colony, and other beekeeping tools, supplies and equipment. These tools and equipments can be locally made with no less quality.

Weaknesses

- Most people in the rural area or the forest-dependent people do not fully understand the art of beekeeping, not even the appropriate traditional systems. They simply collect honey and wax;
- The quality of honey collected is very poor. It has more than 25% moisture content which results in a very rapid fermentation of the honey;
- Lack of sanitation and poor hygiene practices in honey gathering and bottling procedure is a major problem in the rural area;
- Adulteration of honey with additives such as sugar syrup is a common practice – making potential purchasers of honey become reluctant to buy the product;
- The bee hunters have not been given proper training in the art of collecting and honey handling from the wild bees;
- The methods employed in honey harvesting include locating the bee nest, spreading a plastic sheet beneath the nest, building a huge fire thus burning the bees, melting the wax to temperature that causes the entire nest containing honey, wax, pollen and brood to fall onto the plastic sheet.

Opportunity

- To train interested persons (including the bee hunters) in the art of beekeeping for honey production, wax and other products of the hive;
- To improve the quality and increase the quantity of the honey and also increase the quality and quantity of certain crops, fruits and vegetables as a result of pollination by the honey bees;

- To generate incomes for the beekeepers and others involved in production and marketing of honey, wax and other products of the hive;
- To improve the hygiene and sanitation of the honey by removing objectable debris from the honey before it is filtered and bottled;
- To create new job opportunities for people making essential tools, equipment and supplies used by beekeepers and others in the processing, distribution and marketing of honey, wax and other products of the hive;
- To find markets and sell other products of the hive such as queens, packaged bee, pollen and royal jelly.

Threats

- There is no skilled beekeeping personnel to manage and operate the modern apiary;
- There is no adequate and reliable transportation to distribute/market the honey which has been produced;
- There is no guarantee for the safety and security of honey quality; and
- Adulteration of honey by adding sugar and other agents is considered as an efficient way to gain more profits.

IV. Methodology

Taking into account the problems, weaknesses, threats as well as strengths and opportunities outlined above, the approach/method, which emphasizes the active participation of the forest dependent people and the utilization of the existing social capital (such as social trust, traditional knowledge/skills and institution, traditional wisdom, spirit of solidarity and togetherness etc.) and natural capital including natural resources, is proposed in this paper. The said method does not merely focus on the beekeeping itself but also on other activities directly and indirectly contributive to the beekeeping management, and could be operationalized through the following specific activities:

1. Planning and targeting

In the program's initial stage, a community gathering will be held to discuss the program and to design a plan of actions. The gathering will involve various stakeholders including a facilitating institution (NGO) such as Sambangdiri, local NGOs/institutions, formal and informal leaders, and related government agencies.

During the community gathering, criteria of target groups will also be discussed and through more intensive consultations with all related stakeholders, target groups for the program could then be identified.

2. Self Help Groups (SHGs)

Following the identification of the target groups, SHGs of approximately ten individual members will be formed as a basic component of the program. Through SHGs, individual members have opportunities to share experiences and to help each other in solving any emerging problems.

3. Training

Once the SHGs established, training will be conducted in technical and non-technical matters including:

- a) Group motivation training to develop participants self-confidence, leadership, style, risk-taking, cooperative abilities and orientation toward community development, and problem-solving skills;
- b) Beekeeping management on techniques of beekeeping including the construction and maintenance of bee-hives, processing of other bee products, pests and diseases control;
- c) Management training to improve participants' skills in business administration, simple financial management, marketing and other related skills.
- d) Revolving Fund Scheme to complement the traditional saving and lending scheme and to allow the likelihood of the formation of a cooperative in the future.

V. Concluding remarks

Given the potentials of the local people and the abundance of natural resources, combined with the support from other related stakeholders, this proposed program is more than promising to materialize and succeed. Through the program, SHG's members will significantly increase their abilities to manage appropriate

beekeeping, and to manage and monitor their organizational and financial resources. Last but not least, by participating in the program activities, the SHG's members will be able to increase their incomes without destructing the integrity of the forest, but rather, contributing to the reservation of the forest as a result of the beekeeping activities.