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Socialization of Stingless Bee Cultivation for Economic Empowerment of West Payakumbuh Community, Payakumbuh City, West Sumatra

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Abstract: *This activity aims to strengthen the local economy in West Payakumbuh, Payakumbuh City, West Sumatra, by implementing community service related to stingless bee beekeeping socialization. In addition to promoting environmental conservation, this program seeks to raise community awareness of stingless bee beekeeping's potential as a sustainable alternative source of income. Technical instruction in stingless bee beekeeping, processing bee products including honey and propolis, and marketing these goods are used to carry out socialization activities. The findings demonstrated the community's strong passion and ability to successfully implement stingless bee beekeeping techniques, particularly among farmers and breeders. Products from stingless bee bees also have a lot of commercial potential and can lower reliance on the traditional economic sector while also enhancing community welfare. Micro-enterprises based on bee products can also be developed thanks to this training, which should hasten the sustained economic empowerment of communities. In general, this service was successful in promoting the establishment of an eco-friendly company and contributing to the rise in the income of Payakumbuh City residents.*

1. INTRODUCTION

Heterotrigona itama, the stingless bee, is one of the bee species that has the most potential for growth in Indonesia's agriculture and livestock industries. This bee yields premium honey that has substantial commercial worth and health advantages. Furthermore, plant pollination is a crucial function of stingless bees that can increase agricultural output (Gonzalez et al., 2020; Villanueva-Gutierrez et al., 2021).

The favourable geographic and climatic characteristics of Payakumbuh City, West Sumatra, offer significant potential for the growth of stingless bee farming. Because of the city's high agricultural production and diverse ecosystem, stingless bees have easy access to natural food sources like pollen and nectar from tropical plants and farmed crops. Nevertheless, stingless bees' potential as a source of communal economic empowerment has not yet been completely fulfilled. One issue facing the local people is a lack of knowledge and expertise about sustainable and advanced stingless bee rearing methods (Ali et al., 2023; Kurniawati et al., 2023)..

Promoting stingless bee farming through community service projects aims to strengthen the local economy by raising knowledge of the bees' ecological and economic advantages. In

addition to teaching hive construction, colony management, and honey collection and processing, the curriculum aims to impart practical beekeeping skills. This will increase agricultural output and allow the people of Payakumbuh to use stingless bees as an extra ecologically benign source of income (Rahman et al., 2022).

Government programs to enhance rural livelihoods and encourage sustainable economic diversification are also in line with the growth of stingless bee farming in Payakumbuh. This initiative promotes environmental preservation while addressing regional economic issues. Thus, organized initiatives to spread stingless bee farming knowledge and expertise are crucial to achieving these objectives, especially for local farmers and small-scale agribusinesses (Kementerian Pertanian, 2023).

2. METHODOLOGY

To determine the possibility of stingless bee farming in West Payakumbuh, Payakumbuh City, West Sumatera an initial survey was carried out. Local farmers were interviewed, and the biodiversity and climate of the area were observed in order to gather data. Identifying important stakeholders, such as farmer organizations and local government members, was another task at this stage.

The idea and advantages of stingless bee farming were presented at a number of lectures and discussion. Information on the stingless bee's ecological benefits, economic possibilities, and sustainable farming methods was covered in these sessions.

Selected community members worked together to construct a prototype stingless bee farm. This acted as a model for replication by other community members and a demonstration location for best practices in stingless bee farming. The program's development and its effect on the economic empowerment of the community were regularly monitored and evaluated. Future events were improved using participant feedback. The program's outcomes were documented and shared with regional stakeholders, including the government, to encourage the broader use of stingless bee farming methods.

3. RESULT AND DISCUSSION

The stingless bee beekeeping socialization program in West Payakumbuh, Payakumbuh City, West Sumatra, showed encouraging results. A total of 30 participants consisting of farmers and community members involved in the training were able to understand well the basic concepts of stingless bee beekeeping, including hive-making techniques, bee care, and management of bee products. In the evaluation phase, about 80% of the participants stated that

they felt quite ready to start stingless bee bee farming, while 65% of them had already started preparing land or facilities for the activity.

Raising community knowledge of the economic potential of stingless bee products was another overall success of the program. Propolis and royal jelly are two more goods with significant commercial potential that 70% of participants expressed interest in creating. Additionally, suggesting a desire for additional product development, half of participants said they intend to launch stingless bee bee goods onto the local market soon.

The community's knowledge of stingless bee farming grew as a result of lectures and discussion sessions. According to a poll conducted before and after the program, participants learned a great deal about the agricultural, ecological, and financial advantages of stingless bee farming (Iqbal, 2024; Prabowo et al., 2022). The significance of bees for biodiversity and as a tool for sustainable economic growth was recognized by the participants.

Participants gained technical skills in hive construction, colony management, and honey harvesting through hands-on training sessions. Evaluations conducted after training showed that 80% of participants could set up and maintain stingless bee colonies on their own, indicating a notable increase in community capacity (Rahmat et al., 2023; Harahap and Siregar, 2024).

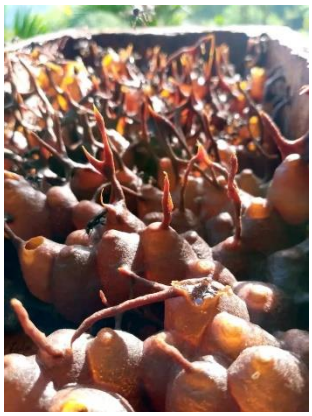

Fig 1. Colony of *H. itama*

Fig 2. Honey harvesting process

The trial project showed how profitable stingless bee beekeeping might be. The average monthly production of honey from each hive was 1.6 kg, which equated to about IDR 700,000 in revenue for each colony. The participants were excited about growing their business since they saw it as a steady way to make more money (Yusuf & Hasan, 2023). Improved agricultural yields on nearby farms were a result of the introduction of stingless bees. Because of improved pollination services, farmers reported a 20% rise in the production of important crops like tomatoes and chilies (Nugroho et al., 2024; Suparman and Salim, 2023). This outcome emphasizes how raising stingless bees can support environmental preservation and agricultural

output.

Through the creation of a local beekeeper cooperative, participants in the program promoted community involvement by exchanging ideas, working together to solve problems, and creating marketing plans for honey and derivative products. It is anticipated that this collaborative model will improve the program's scalability and sustainability (Safitri and Wijaya, 2023). Community distrust and restricted access to high-quality colonies were among the early difficulties. Long-term assistance is needed to address these problems, including technical training, financial resources for equipment, and integration with government initiatives aimed at rural development (Kementerian Pertanian, 2024). To expand the program, future initiatives could also look into joint ventures with agricultural extension services.

According to the findings, stingless beekeeping is a practical and long-term strategy for empowering rural communities. Its ability to support the more general objectives of sustainable development is highlighted by the higher economic returns as well as the ecological and agricultural advantages. Notably, the cooperative model created by this program can be used as a template to replicate similar projects in other locations. By emphasizing instruction, hands-on training, and community involvement, the program creates a strong basis for rural development that is sustainable. As an environmentally beneficial endeavor, stingless bee farming not only strengthens environmental stewardship but also gives local communities economic power.

4. CONCLUSION

This program has a lot of potential to boost the local economy, according to the outcomes of the service provided in the socialization of stingless bee beekeeping in West Payakumbuh, Payakumbuh City, West Sumatra. Both raising community awareness of the value of conservation and beekeeping and boosting revenue from stingless bee bee products like propolis and honey are two major benefits of introducing and training people in beekeeping techniques.

The program's success demonstrates how crucial it is for the community, academia, and government to work together to build an environmentally friendly agricultural industry that can generate long-term economic value. It is envisaged that stingless bee beekeeping will expand, lessen reliance on the traditional economy, and enhance the welfare of residents of Payakumbuh City in a sustainable way with additional training and ongoing support.

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