World Academy of Science, Engineering and Technology International Journal of Agricultural and Biosystems Engineering Vol:18, No:12, 2024

## Enhancing Sustainable Stingless Beekeeping Production through Technology Transfer and Human Resource Development in Relationship with Extension Agents Work Performance among Malaysian Beekeepers

Authors: Ibrahim Aliyu Isah, Mohd Mansor Ismail, Salim Hassan, Norsida Man, Oluwatoyin Olagunju

Abstract: Stingless beekeeping is not only a profitable activity for Malaysian beekeepers but also for the Malaysian economy. However, natural honey has faced some difficulties, which resulted in low production due to a lack of information on improved technology as well as the capacity and potential building of stingless beekeeping farmers, which depend mostly on information received from the extension agents. Hence, it is the responsibility of the extension agents to give useful information on the available technology and develop the capacity of the farmers to make the right decision that will improve their level of production. This study assessed how technology transfer and human resource development skills influence the work performance of the extension agents toward sustainable beekeeping production among beekeepers. The study sought to establish the role of relevant technology transfer and human resource development skills in effective performance. The research design was a descriptive and quantitative survey of stingless beekeepers on technology transfer and human resource development by the extension agent. Data was obtained from 54 beekeeping farmers and was analyzed using descriptive and inferential statistics. The results revealed that technology skill, technology dissemination skill, technology evaluation skill, Decision-making process skill, Leadership development skill and work performance were rated moderate by stingless beekeeping farmers, while Social skill was rated high. A significant and positive correlation (P<0.01) existed between all variables and performance. Regression results showed that leadership development skills, Decision-making process skills, and social skills are significant (P=.05), while technology skills, technology dissemination skills, and technology evaluation skills are not significant. The highest contributing factor is social skill ( $\beta$ =.446). Beekeeping is a profitable project in Malaysia and can be sustained if the extension services and programs are well carried out by competent extension agents and relevant agricultural government agencies.

Keywords: beekeeping, extension agents, human resource development, sustainable, technology transfer, work performance

 $\textbf{Conference Title:} \ \text{ICAB 2024:} International \ Conference \ on \ Apiculture \ and \ Beekeeping$ 

**Conference Location :** Paris, France **Conference Dates :** December 30-31, 2024