

## Activities for developing a manual for producing fish leather for the utilization of fish remains

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### **[Background & Purpose]**

I planned to travel to conduct this project on effective utilization of fish skin in Saint Lucia, but it was impossible because of COVID-19 pandemic; therefore, my goal changed to developing a manual for producing fish leather from fish skin which can be used practically in Sungai Sembilan in Malaysia. The reason is Sungai Sembilan is one of the areas expecting “Enhancement of Community Fundamentals” and was a project site assigned for online activities in last year’s project. The fact is in Malaysia fish is usually eaten with the skins, and stingray skin is exported to the other countries.

### **[Activities]**

The following procedure was followed for developing the manual. By changing the concentrations of the tanning extract solutions and their immersion time, the suitable concentration and immersion conditions for the tanning process were determined in a laboratory. The completion of protein denaturation was defined by the existence of residual protein on the skins by using a testing liquid which is generally used to know the washing conditions by examination of the protein presence. The current situation of fish leather utilization and demand in the area were researched through online discussions with a fisher in the area and staff from the Department of Fisheries, Malaysia. The practicality of the manual to produce fish leather from the skin was evaluated by conducting a fisher’s trial by following the explanations of the manual. Finally, I am planning to evaluate my project in a meeting with the other participants.

### **[Achievement]**

The manual of how to produce fish leather, which includes the processes of cleaning, salting, tanning and drying, was developed and the skin of stingray was successfully tanned by the fisher by following the manual’s instructions. Although tea leaves were recommended for the tanning process in the trial because they are easy to obtain and affordable compared with red algae, finding alternative materials for the tanning process is recommended to use wasted resources effectively in the site. The planed final meeting has not been held because a terrible flood disaster has affected the project site in Malaysia towards the end of last year, thus the meeting will be held as soon as possible. Fish leather and the utilization of fish skin remains attracted the interest of the participants. Therefore, this manual is expected to be used effectively for the utilization of fish skins remains.

