ANNEXURE B

FINAL REPORT (DEVELOPMENT AWARD)

AWARD RECIPIENT: Moonrise Seaweed Co.

ADDRESS: PO Box 33 O'Sullivan Beach SA 5166 Australia

DATE: August 13th 2024

ACTIVITY UNDERTAKEN

Attend the 9th Asian Pacific Phycological Forum (APPF) in Sapporo, Hokkaido (Moonrise Seaweed Co. including Kaurna representative Rebecca Simpson). Meet with international colleagues in the macroalgae and blue carbon industries. Network with delegates. Visit Upopoy National Ainu Museum and Park to learn about Hokkaido First Nations culture and connection to seaweed. Investigate commercial uses for macroalgae in Japan. Continue research and network with international First Nations around prospective International First Nations Seaweed Collective (conceived by Moonrise Seaweed Co.).

Highlights from APPF presentations include -

- Phycological Women in the Asian-Pacific (followed by an evening session of listening to women in the sector discuss barriers for equality and their experience working in seaweed research)
- Culture of Sargassum (Fucales, Phaeophyceae) for tropical species, methods of recruitment of zygotes – Philippines
- Thai seaweed fishery – current state of industry, insights into commercial use in the hospitality industry, remediation technology
- A Korean study outlining United Nations Sustainable Development Goals and how they link to the carbon sequestration of *Ulva* blooms in marine sediment
- Australian research conducted into a multi-species seaweed and biochar supplement fed to dairy cattle with discussion on linkages between supplements, overall gut health of cattle and reduction of greenhouse gas emissions
- Genetic diversity research in Japan conducted on *Ecklonia* species, indicating that more diversity is required from parental sporophytes in seedstock to mitigate homogeneity in wild populations - a consideration that should also be taking into account when seeding lines for commercial scale farmed seaweeds
- *Ulva* used to determine long term seaweed systems biology research model including a global dataset that we have the potential to contribute through our research

A full conference program including abstracts for all presentations was given to all delegates and now acts as an excellent resource we refer to in our research.

OUTPUTS AND OUTCOMES ACHIEVED TO DATE

Increased network connections within the Asian Pacific seaweed sector were achieved. In particular, strengthened connections between Moonrise delegates and researchers in Japan and Hawaii with new opportunities formed for collaborative research. We met multiple times with First Nations seaweed researchers within the Asia Pacific region and discussed ways in which we could work together to create and international First Nations Seaweed Collective - possible future outcomes from this include an online network for research sharing and discussion, and a database of both culturally safe and culturally unsafe companies seeking to commercialise marine resources.

Upopoy National Ainu Museum and Park opened our eyes to a number of ways in which Traditional Owners in Japan celebrate their knowledge and connection to Sea Country. We were able to learn about various ways in which Ainu live and work with marine resources including seaweed for food, weaving etc., and how these practices have been handed down through generations. Evidence of cultural exchange between Ainu and Australian First Nations was on display.

APPF presentations lead to further knowledge in a number of different areas (outlined above) and in particular resulted in new ways of thinking about low tech zygote recruitment for brown species that we would like to investigate in our research, as well as the implications of genetic diversity in wild kelp stocks from a conservation perspective. In between sessions at the conference we were able to meet with a number of delegates also from Australia to discuss potential ways of working together back home, strengthening our local network connections and increasing our market visibility (both nationally and internationally).

Japanese seaweed market research was conducted throughout the trip, noting a variety of fresh (dried) seaweed (predominantly kombu/kelp) regularly found for sale. There was a plethora of value added seaweed products available in every convenience store we went into, including ‘black stick kelp’ snack (kelp blade, sugar, salt, yeast extract, etc.), pickled cucumber with kelp powder seasoning, ‘stick kelp plum flavour’ snack (kelp blade, plums, perilla liquid, ume vinegar, salt), ‘seaweed stem, plum & perilla flavor’ snack (blanched salted wakame (stem) (domestic), salt, sugar, plum vinegar, mirin acidulant, sweetener, seasonings, calcium lactate), ‘vinegared kelp’ snack (kelp (domestic), brewed vinegar, bonito extract, fermented seasonings, protein hydrolysates/seasonings (amino acids, etc), sweeteners (stevia)), ‘konjac chips seaweed and salt’ snack (konnyaku powder (konjac and potato (domestic), agar, vegetable oil, granulated sugar, bonito stock, salt (algae salt), sea lettuce (domestic), pepper/modified starch, calcium hydroxide), a large variety (entire rows of shelving units) of sliced and dried/packaged *Wakame*, *Ulva* and kelp was available in all supermarkets ready to add to miso soups or re-hydrated for other savoury dishes. Skincare and bath products available regularly contained phrases such as ‘extracts from the sea’, although often the Japanese to English translation app (or possibly less stringent regulatory requirements for listing exact ingredients) wouldn’t state which seaweed species or extracts were used. Almost every meal in restaurants would come served with either fresh, pickled or dried seaweed.

The contrast between Australian supermarkets/restaurants was stark, and we can clearly see how much demand there is within everyday consumers in Japan for products containing seaweed as the major ingredient.