

## GlobalSeaweedSTAR Capacity Building Fund

### Completion Report

#### Awardee Details

Grant reference ID	GSS/CBF/028
Full name/title	Birdie Scott Padam/Mr.
Position held	Microbiology Technician
Organisation	Seadling Pte. Ltd.



#### Details of Capacity-Building Activity

Name of activity	12th International Phycological Congress
Date held	22-26 March 2021
Organiser/provider	International Phycological Congress, Safe Seaweed Coalition

#### Biography

Currently, I am involved in 2 ongoing projects related to seaweed under Seadling Pte. Ltd. At Seadling we are transforming our locally farmed seaweed (*Kappaphycus alvarezii*) into a value added product particularly as a functional animal feed additive. We have just set up our pilot factory this year producing processed seaweed product at the capacity of 200Kg/month and targeting to 1 tonne/month in the next couple of months. Our product is well received, and we are exporting both in the Southeast Asian region as well as to Europe. Our plan is to create more products (diversify) by improving the nutrient content and bioactivity of the seaweed biomass through fermentation. Seaweed is sustainable as it can be part of the carbon

capture initiative, reducing overfishing, as well as can provide alternative income to local coastal community. The second project with the collaboration of the local university (Universiti Malaysia Sabah, Malaysia) involve identifying potential endophytic beneficial bacteria from farmed *Kappaphycus* seaweeds. These bacteria will be used as a potential component to improve seedling growth as well as tackling diseases. However, this project is still at its early stage and we are still collecting samples from different locations, isolating and identifying isolated endophytic bacteria.

## **Report on Capacity-Building Activity**

The capacity-building activity involves conference attendance, learning new knowledge on different subject matter and discussions with presenters. There have been a lot of new insights involving seaweed biology and ecology as well as potential applications of seaweed biomass. As much as the new findings presented, there are still a lot of gap in the current literature and more work needs to be done to ensure the seaweed industry can realize its full potential, both as a climate change solution as well as driving the future global economy. I was really amazed with the vast diversity of seaweed species and how it has significant impact towards the surrounding ecology. Surprisingly, some seaweeds can give negative impacts to the surrounding ecology if it blooms in an uncontrolled manner. Currently, seaweed biomass received much attention to the research and industrial community due to the potential vast open ocean space for farming and many of the value-added products that it can generate.

One of the issues that we encounter in our factory production is the amount of epiphytes that attached to farmed seaweeds (*Kappaphycus*) that requires a lot of man hour labour to be removed. Epiphytic algal bloom is not a critical issue since most of it is not toxic or life threatening, but it does affect the farming activity as these epiphytes will compete with available nutrients in seawater. From the downstream perspective, epiphytic algae to some degree increases the processing cost and reduces the general quality of the seaweed. Calcareous algae for example, is quite tough to be removed from the substrate macroalgae adding significant unnecessary calcium salt into the biomass. Unfortunately, epiphytic algae bloom issue is not addressed in the conference.

There was only one section in the conference addressing applied phycology in general which think it should be more. My interest is more inclined towards improving the nutritional quality of seaweed biomass and extraction of bioactive metabolites. There are several examples of oral presentations addressing current findings in that topic which I think is quite beneficial for my work in the industry. These include improving macronutrients such as protein content as well as extraction of antimicrobial compounds. However, there are always the economic aspects of adapting new methods and scaling-up is a huge challenge from the perspective of the industry. Overall, the experience and knowledge gained from this conference is really rewarding.