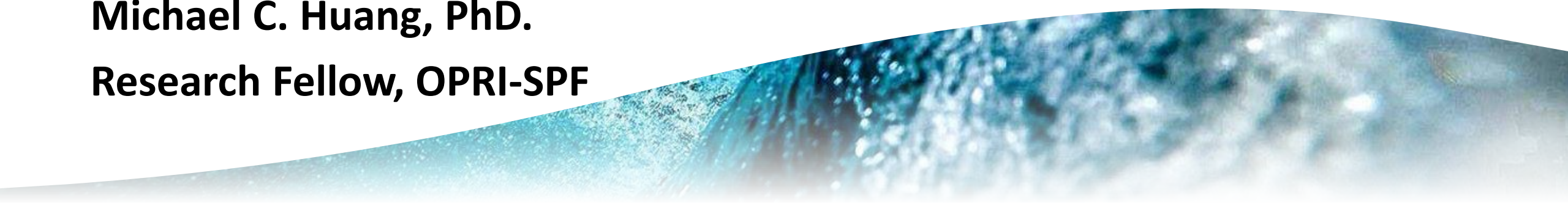


# ***The Role of Deep Seawater in the Blue Economy and Sustainable Development***

- The 2020 International Deep Sea Water Symposium, Keelung, Taiwan -

**Michael C. Huang, PhD.**

**Research Fellow, OPRI-SPF**



# *Contents*

- **SDGs and Deep Seawater**
- **Kumejima (Okinawa)**
- **Namerikawa (Toyama)**
- **Revitalization and ways forward**







**SOLUTION:**  
**Invest in Sewerage and Wastewater Infrastructure for Coastal Communities**

**BENEFITS:**  
Short-term job creation, avoided revenue loss from beach closures, improved societal well-being, reduction in water-borne diseases, improved reef and ecosystem health and reduced greenhouse gas (GHG) emissions

**SOLUTION:**  
**Invest in Coastal and Marine Ecosystem Restoration and Protection**

**BENEFITS:**  
Short- and long-term job creation, improved societal well-being, improved water quality, improved reef and ecosystem health, wild fish stock recovery, increased coastal resilience and carbon sequestration

**SOLUTION:**  
**Invest in Sustainable Community-Led Non-fed Mariculture**

**BENEFITS:**  
Short- and long-term job creation, economic diversification for coastal communities, improved livelihoods (particularly for women), improved water quality, wild fish stock recovery, reduced GHG emissions and carbon sequestration

**SOLUTION:**  
**Incentivise Sustainable Ocean-based Renewable Energy**

**BENEFITS:**  
Short- and long-term job creation, new economic opportunities for zero-emission fuel generation, improved local air quality, opportunities for water security through desalination and reduced GHG emissions

**SOLUTION:**  
**Incentivise the Transition to Zero Emission Marine Transport**

**BENEFITS:**  
Short- and long-term job creation, indirect long-term job creation in tourism and fisheries sectors, improved local air quality, resilience and reduced GHG emissions and ocean acidification



HIGH LEVEL PANEL for  
**A SUSTAINABLE OCEAN ECONOMY**



# Five Priorities for Blue Recovery to the COVID-19

**SEWERAGE & WASTE TREATMENT INFRASTRUCTURE**

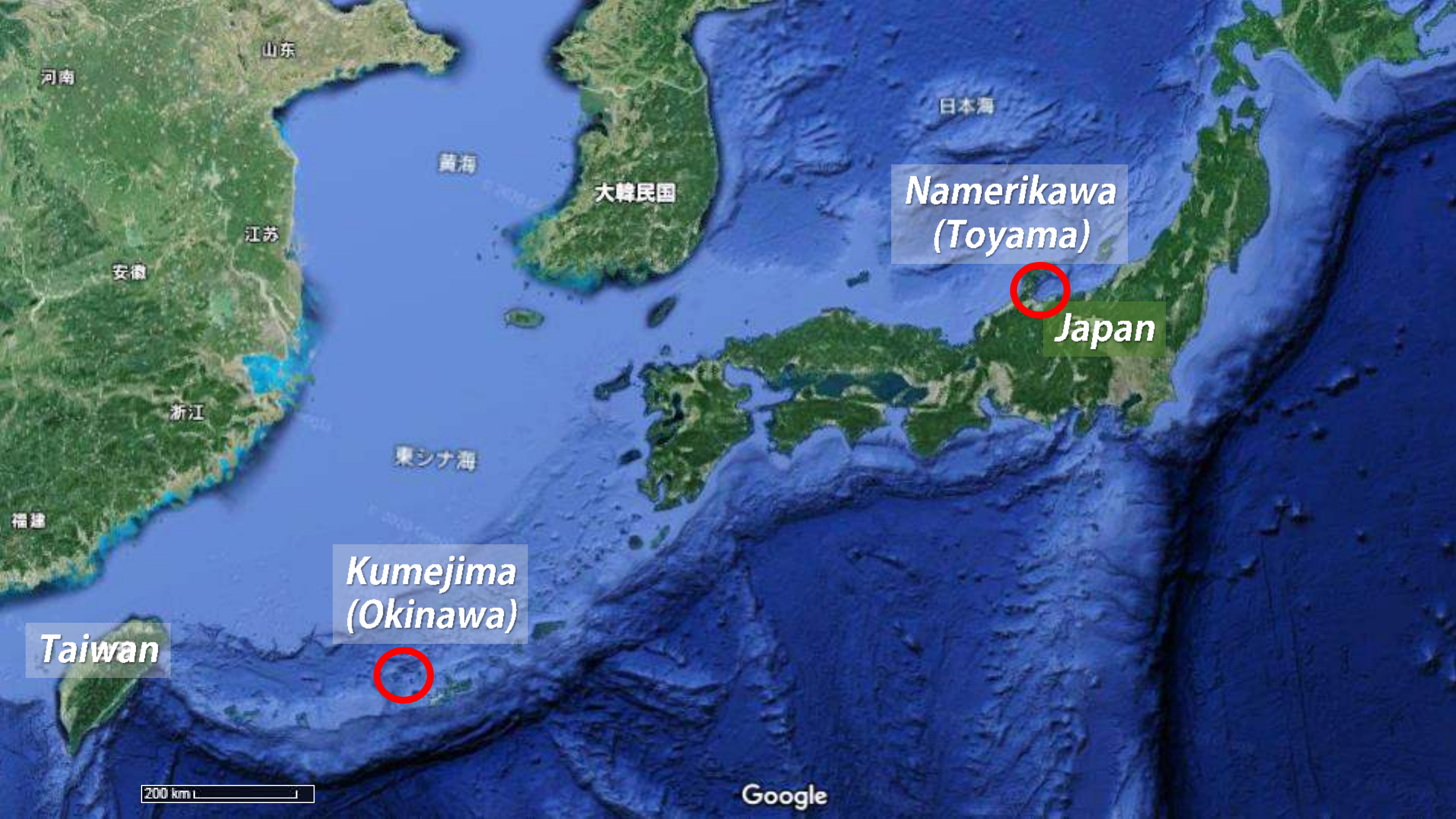
**COASTAL & MARINE ECOSYSTEMS**

**MARICULTURE**

**OCEAN-BASED RENEWABLE ENERGY**

**MARINE TRANSPORT**





河南

山东

日本海

黄海

大韓民国

*Namerikawa  
(Toyama)*

江苏

*Japan*

安徽

浙江

東シナ海

*Kumejima  
(Okinawa)*

*Taiwan*

200 km

Google



# 想哭的時候 就來久米島吧~

距離那霸  
30分鐘

比故鄉更溫暖、  
回歸最初的島嶼

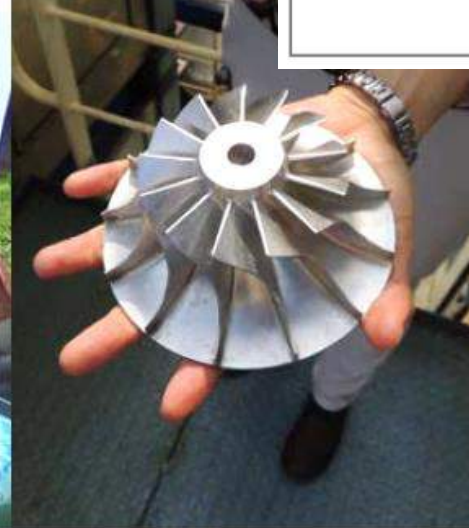
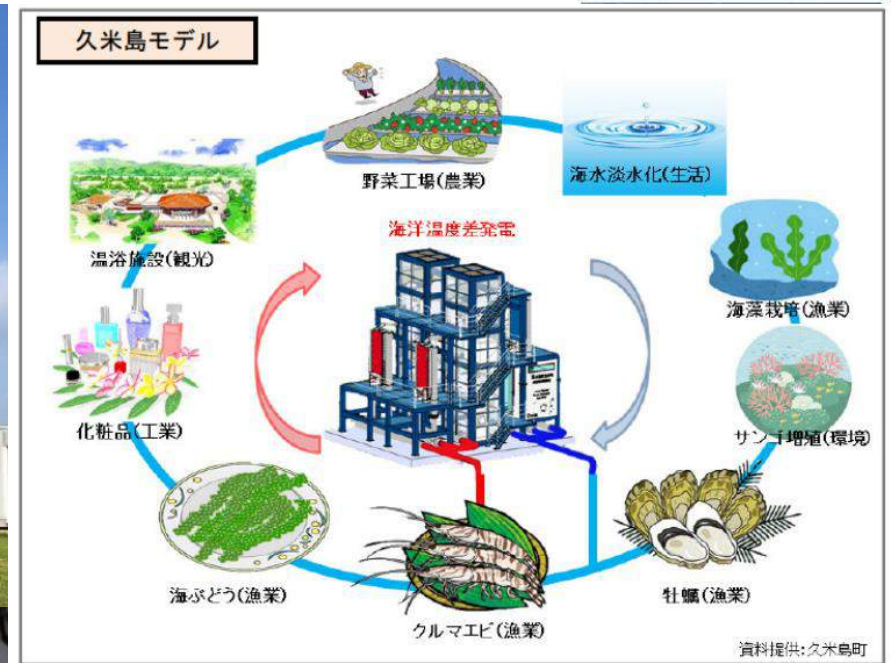
久米島

久米島觀光手冊  
KUMEJIMA TOURISM Guide Book





# OTEC (Ocean Thermal Envergy Conversion) in Kumejima, Okinawa





# OTEC and Multiple Use of Deep Sea Water in Kumejima, Okinawa



Abalone



Sea Grapes



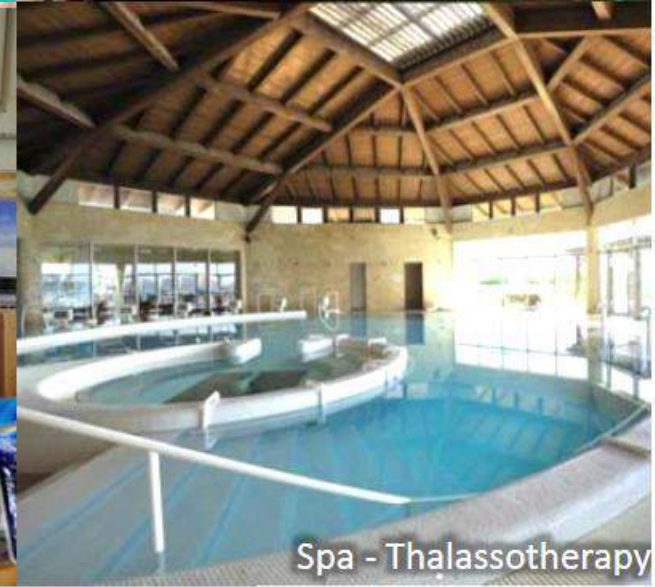
Restaurants & Tourism



Agriculture



Cosmetics



Spa - Thalassotherapy







一年中が旬。  
富山の四季彩



【富山の海産物】  
ほたるいか



【富山の海産物】  
しろえび



【富山の海産物】  
紅ずわいがに  
(赤巻の紅ガニ)



【富山の海産物】  
ぶり



2015年春  
北陸新幹線開業!

富山で休もう。

観光キャンペーン実施中!

パノラマ  
キートン  
富山は  
あっぱれ

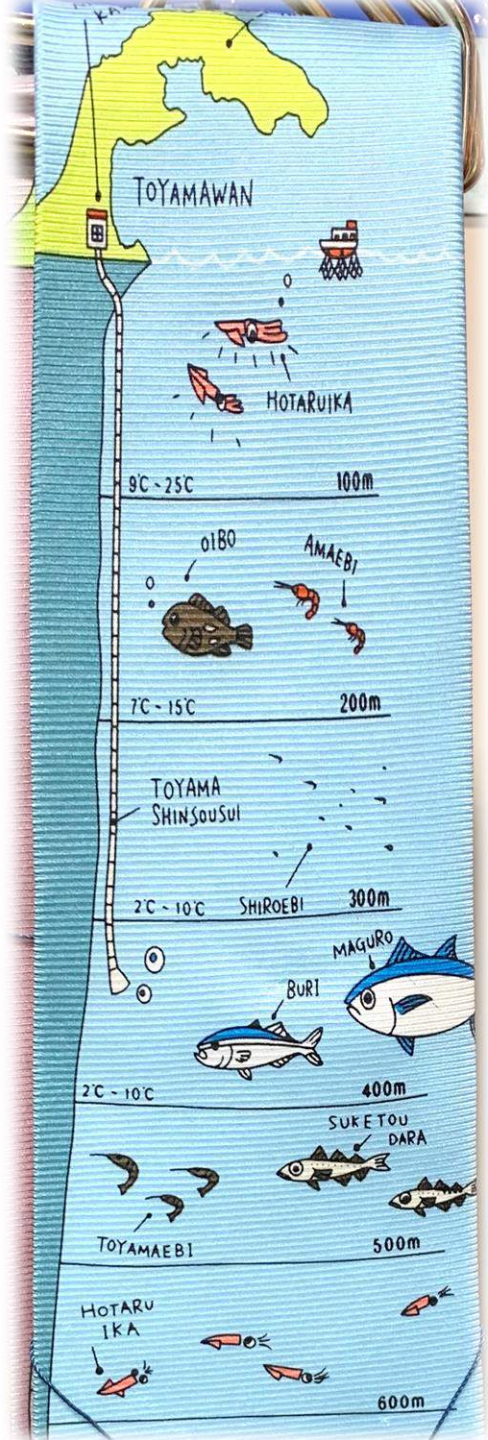
NAMERIKAWA

滑川

海洋深層水

アツアツポケット

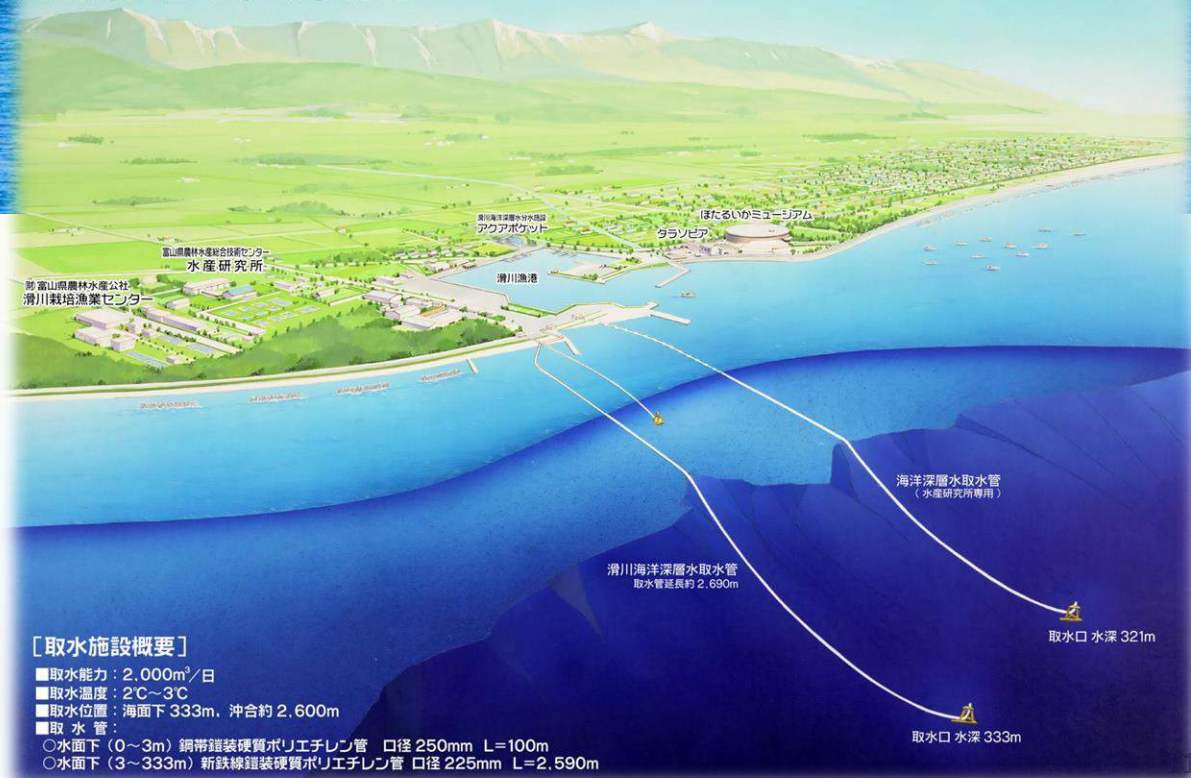
DEEP SEA  
富山の深層水







## 滑川海洋深層水取水施設



DEEP SEA

富山の深層水

水の惑星地球 水は生命誕生の源  
その広大な海洋に採られた  
取りない可能性を秘めた  
貴重な資源 海洋深層水

**2°C** 富山の海洋深層水

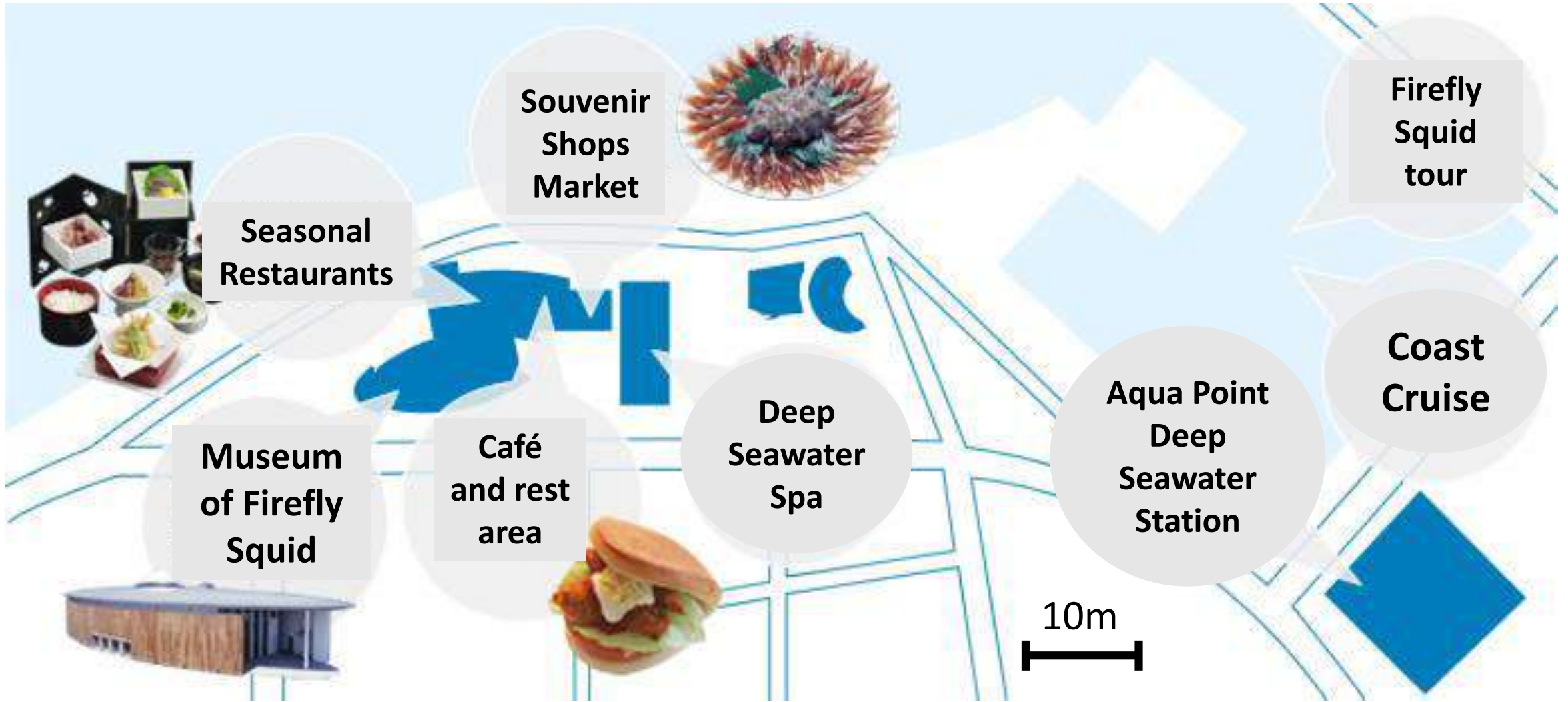
水深300m以深から取水され、2℃と非常に冷たく、  
清浄で、水質も安定しています。

富山県深層水協議会 <http://www.t-deepeat.jp>



# Namerikawa Deep Seawater Park

*One stop for all!*

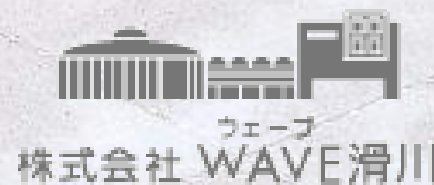






**Museum of Firefly Squid (est. 1998, renewal in 2017)**

**Facilities complex operated by**





# 富山湾岸クルージング



富山湾岸を約40分かけて遊覧します。  
富山湾から望む立山連峰の大パノラマ!  
標高3,000m級の北アルプスの景色を  
皆さま、是非ご観覧ください。

2020年  
11月29日(日)まで運航予定

●受付/ほたるいかミュージアム ●出発地/滑川漁港



\*写真はイメージです。  
\*天候および海上の状況によりコースの変更または欠航になる



<https://hotaruikamuseum.com/>

HO TARUI KA  
ほたるいか

富山湾  
の  
風物詩



店内商品を、宅配便で  
発送致します!

☎ 0120-35-9235  
AM 8:30 ~ PM 5:00





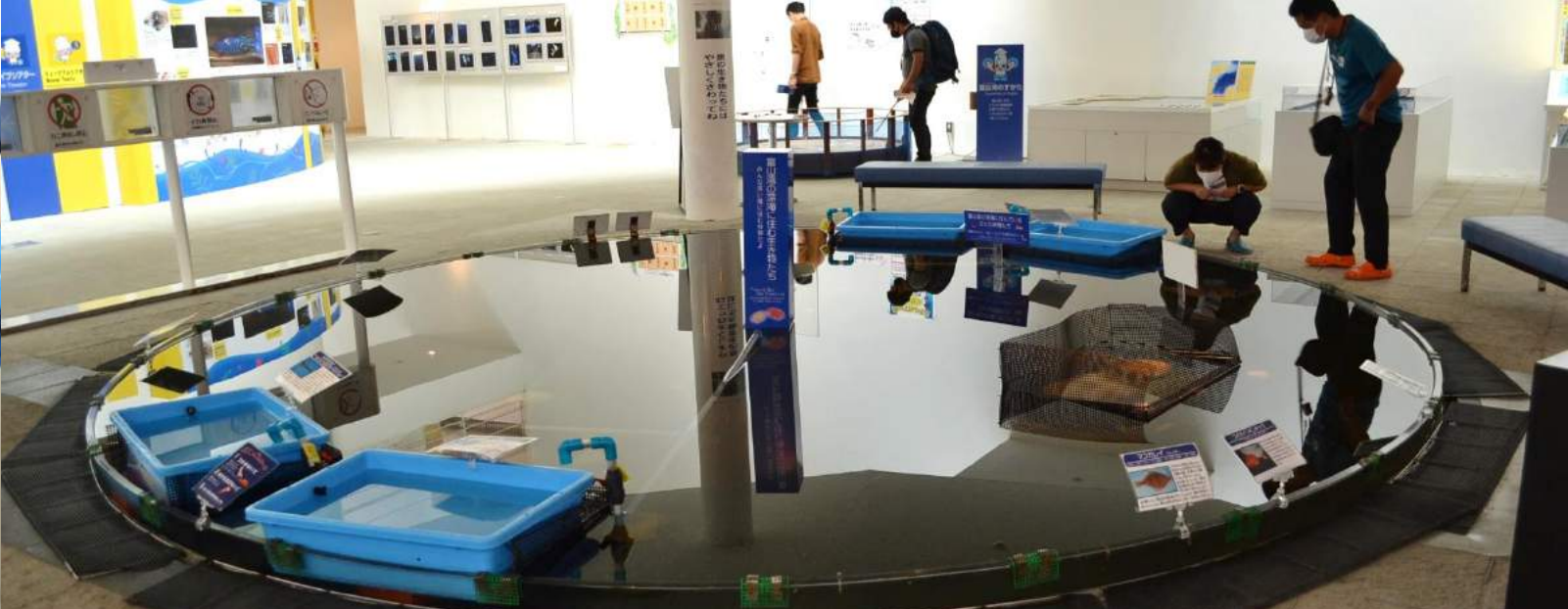




# Hometown pride and love



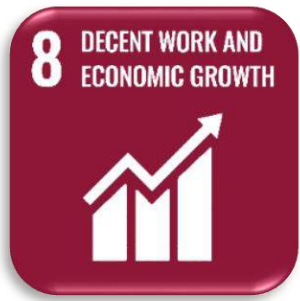




# Interactive observation





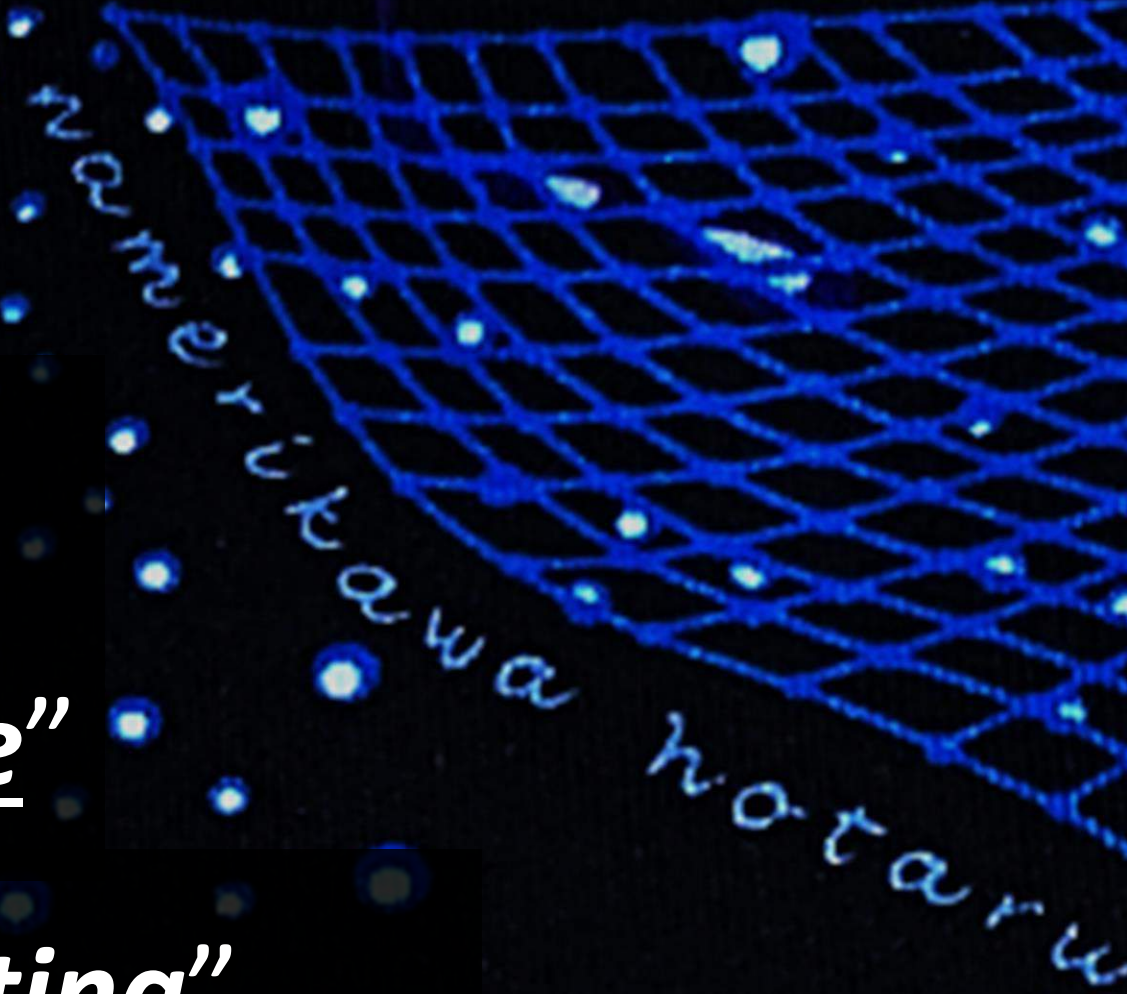


**Silver human capital**



# Ways forward

- “Fever” → “Favor”
- “Promotion” → “Pride”
- “Cramming” → “Creating”
- “Sightseeing” → “Fascinating”





# Industry: “Fever” → “Favor”

- Provision of value-added chains
- Deep seawater as part of life





# Revitalization: “Promotion” → “Pride”

- Capacity building and training for person of Wind-like and Earth-like
- Community-driven and cultivating





# Education: “Cramming” → “Creating”

- Grassroots inspiration
- R&D and Innovation
- Life-time learning
- Inclusive venture





# Tourism: “Sightseeing” → “Fascinating”

- Moments of breathtaking
- Enlightenments



<https://www.taiwan.net.tw/m1.aspx?sNo=0001019&lid=080188>





2021  
2030 United Nations Decade  
of Ocean Science  
for Sustainable Development







 Scan me

**Thank you!**