GENDER, DISASTER AND WELL-BEING

UNESCO CHAIR CONFERENCE 2025



WELCOME MESSAGE

Welcome to the 2025 International Conference on Gender, Disaster, and Welfare, with a special focus on the theme Ocean and Women's Resilience. We are honored to host this important event on May 27–28, 2025, and extend our warmest welcome to scholars and experts from around the world. In particular, we are pleased to acknowledge the participation of our esteemed partners from **Kobe University** (Japan), Universiti Tunku Abdul Rahman (Malaysia), Mae Fah Luang University (Thailand), and Gadjah Mada University (Indonesia).

This conference draws inspiration from the United Nations Sustainable Development Goals (SDGs), introduced in 2015 to address global challenges such as poverty, hunger, peacebuilding, environmental protection, and inclusive prosperity. In response to this global call, Taiwan formulated its own Taiwan Sustainable Development Goals, finalized in 2018, which continue to evolve through an ongoing review process.

We are also proud to highlight the role of the UNITWIN/UNESCO Chairs Program, established by UNESCO in 1992 to promote international academic cooperation. Notably, Kobe University's project on "Gender, Vulnerability, and Well-being in Disaster Risk Reduction Support" exemplifies interdisciplinary collaboration across the humanities, social sciences, and natural sciences. This initiative is closely aligned with the SDGs and seeks to advance education, research, and policy development in support of resilience and peace.

forward to your active engagement in making this conference a truly meaningful and impactful experience.



Jie-Min Lee

Chair, Dept. of Snipping and Transportation Management, NKUST



Overview

Established on February 1, 2018, National Kaohsiung University of Science and Technology (NKUST) was formed through the merger of three institutions: National Kaohsiung University of Applied Sciences, National Kaohsiung First University of Science and Technology, and National Kaohsiung Marine University. This merger made NKUST the largest technological university in Taiwan.

Strong connection with industries

NKUST has maintained long-term collaborations with regional industries for over 50 years, particularly in fields such as precision machinery, civil engineering, chemical and materials engineering, mold engineering, electrical engineering, and electronic engineering. Building on its institutional legacy, faculty expertise, and resource advantages, NKUST continues to strengthen ties with industry to cultivate practically skilled talents and uphold educational excellence.

Innovation and Entrepreneurship

As the first officially designated entrepreneurial university in Taiwan, NKUST has integrated academic and administrative resources to build a vibrant ecosystem for innovation and entrepreneurship. The university actively fosters a creative campus culture and develops entrepreneurial programs. Recognized by the Ministry of Education, NKUST serves as the Innovation and Maker Education Base in Southern Taiwan.

The university aims to enhance students' creativity, hands-on capabilities, interdisciplinary competence, and employment competitiveness—objectives that align with national efforts to promote the commercialization of university research and innovation.

Ocean Technology Development

NKUST places strong emphasis on the development of ocean industries and the cultivation of marine professionals. Through its achievements in industry-academic cooperation and ocean technology R&D, NKUST serves as a key talent base for Taiwan's maritime sector. The university is committed to contributing to the development of the Kaohsiung Harbor region, meeting local industry needs, aligning with government policies, and advancing the value and sustainability of the ocean economy.

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GENDER, DISASTER AND WELL-BEING

AGENDA

MAY 27

The Resilience of Women Inspired by the Ocean

09:30	Registration
10:00	Opening Speech & Group Photo

Keynote Speeches

10:30	Keynote Speech 1: The Ocean Is Our Life: Women Protecting the Sea in a Dangerous World Dr. Ronni Alexander
11:00	Keynote Speech 2: The Practice of Regional Revitalization and Sustainable Development in Yong-An Fishing Community: A Miraculous Journey of Young Women Returning Ms. Yu-Syuan Su
11:30	Keynote Speech 3: Maritime and Women Mr. Po-Yen Tsai
12:00	Lunch Break

01

Research Presentations

Theme: Gender, Vulnerability, and Well-being in Disaster Risk Reduction Support

GENDER, DISASTER AND WELL-BEING

14:00	Research Presentation - Thailand
14:15	Research Presentation - Malaysia
14:30	Research Presentation - Japan
14:45	Research Presentation - Taiwan
15:00	Panel Discussion
15:15	Tea Break
15:30	Project Affairs Meeting
18:00	Welcome Party

FIELD VISIT SCHEDULE — MAY 28

09:30	National Science and Technology Museum – Stories of Recovery and Reconstruction after Morakot
13:00	Rinari Tribe – Morakot Typhoon Recovery Achievements
15:30	Shanchuan Glass Suspension Bridge
18:00	Farewell Dinner

PROJECT INTRODUCTION

GENDER, VULNERABILITY AND WELL-BEING IN DISASTER RISK REDUCTION SUPPORT

In 2015, the United Nations introduced the Sustainable Development Goals (SDGs) with the aim of eradicating poverty and hunger, fostering dignity, justice, and inclusive peaceful societies, as well as protecting the environment to ensure prosperity for both present and future generations. The SDGs comprise 17 core goals and 169 specific targets, with 232 indicators established in 2017 to measure progress.

Sustainable development is also one of Taiwan's core values. In response to global sustainable action and to align with international standards while addressing local development needs, Taiwan formulated its own Taiwan Sustainable Development Goals in 2016, based on the UN SDGs. These goals were finalized in 2018, followed by the development of corresponding indicators in 2019, with a rolling review and revision mechanism in place.

In 1992, the United Nations Educational, Scientific and Cultural Organization (UNESCO) launched the UNITWIN/UNESCO Chairs Program, which now involves over 700 institutions in 116 countries. This program promotes inter-university cooperation and networking through knowledge sharing and collaboration, enhancing institutional capacities worldwide. Through this network, global higher education and research institutions pool their human and material resources to address current challenges and support social development. In many cases, the program serves as a think tank and bridge between academia, civil society, local communities, and policymakers. It supports informed decision-making, the development of new academic programs, innovative research, and the promotion of cultural diversity, while enriching and enhancing university initiatives.

One such initiative is the "Gender, Vulnerability and Well-being in Disaster Risk Reduction Support" project, led by Kobe University. This project aligns with the UN SDGs and aims to contribute to global sustainable development and peace. Drawing from Kobe University's own experiences as a disaster-affected institution, the project brings together universities and institutions from multiple countries to deepen cooperation and build a safer and more inclusive world.

This project adopts an interdisciplinary approach that integrates the humanities, social sciences, and natural sciences. It explores cross-cutting issues such as gender and vulnerability, aiming to make contributions in education, academia, and policy-making. Launched in 2018, the project operates in four-year phases and is currently in its second phase (February 2022 – February 2026). National Kaohsiung University of Science and Technology (NKUST) is a proud member of this project.

For more information about the project and its outcomes, please visit: https://www.office.kobe-u.ac.jp/opge-kyodo-sankaku/project/unesco/en/unesco-chairs.html

THE RESILIENCE OF WOMEN INSPIRED BY THE OCEAN

Keynote Speech 1:

The Ocean is our Life ~ Women protecting the sea in a dangerous world

Dr. Ronni Alexander

Keynote Speech 2:

The practice of regional revitalization and sustainable development in Yong-An fishing community:

A miraculous journey of young women returning

Ms. Yu-Syuan Su

Keynote Speech 3: Maritime and Women

Mr. Po-Yen Tsai

Keynote Speech 1:
The Ocean is our Life ~
Women protecting the sea in a dangerous world

Dr. Ronni Alexander

Ronni Alexander is a professor emerita of international relations and peace studies at Kobe University, where she taught for 33 years in the Graduate School of International Cooperation Studies. She served as the director of the Gender Equality Office and has been the chair-holder of the Kobe University UNESCO Chair on Gender, Vulnerability and Well-Being in Disaster Risk Reduction Support since its inception in 2018. Ronni came to Japan in 1977 after graduating from Yale University to work in Hiroshima. In 1982, she moved to Tokyo to attend graduate school, receiving degrees in public administration (MA) and international relations (PhD) before coming to Kobe in 1989. Her scholarly work focuses on the island Pacific, with an emphasis on nuclear issues, gender, and narratives of safety. Her numerous publications include scholarly work and picture books. In 2005 she began the Popoki Peace Project providing an ongoing platform for creative peace action, education and disaster support work.



07

The Ocean is our Life ~ Women protecting the sea in a dangerous world

Ronni Alexander Kobe University

Abstract

This presentation will be composed of stories of women and the sea in the context of gender, vulnerability, well-being and disaster. It will invite consideration of the ways our lives are entwined with sea, and how our understandings of the sea and activities associated with it are gendered, stressing the importance of the perspectives and activities of women and marginalized genders for (re)creating healthy communities and lives. It will begin with my own story, and the story of the Popoki Peace Project and Popoki Friendship Story activities. These activities began after the 2011 Great East Japan Earthquake and involve drawing freely on a long cloth. Some of these drawings are used in the stories introduced in this presentation.

The first section of the presentation includes a brief introduction to the Kobe University UNESCO Chair on Gender, Vulnerability and Well-being in Disaster Risk Reduction Support, locating it within the Global Priority Gender Equality Framework established by UNESCO in 2022. Our Chair applies most closely to the cross-cutting theme of Women, peace and security: crisis preparation and emergency response. Among the recommended actions pertaining to this theme are education and capacity building for women and girls, eradication of gender-based violence and support for women working in recovery, including protection of cultural and natural heritage. This presentation stresses protection of heritage in the context of women and the sea.

It is important to understand why gender equality is so important and how our conscious and unconscious biases might affect the way we think about women and the sea. Here I will briefly introduce the concepts of gender, vulnerability and well-being, asking the audience to reflect on their own understandings of gender and the sea. The objective is to illustrate some of the many ways that cultural and/or personal understandings of gender and vulnerability can be exclusionary, making some aspects of the involvement of women with the sea hard to see and denying women recognition and/or opportunities in ocean-related activities, including work and research. Stories of two women who might challenge our gender biases are illustrative of this point.

The ocean, with its changing colors, shapes, sounds and multiplicity of life can be inspirational for its beauty, and for the challenges it represents to those who want to learn more about it, use its resources or incorporate it into their daily lives. At the same time, it can be terrifying, dangerous and unpredictable. As humans, we are dependent on the oceans not only for the richness of marine resources and the opportunities it provides for travel and pleasure, but also for its role in keeping our entire planet and all life on it alive. For many people around the world, especially those living in coastal communities, the ocean is a part of everyday life. Like peace, health and the air we breathe, most people tend to take the ocean for granted until something happens to make them take another look. That event might be a beautiful sunset, but it might also be a shipping disaster, a tsunami, or the poisoning of marine resources caused by human activities.

The ocean is not necessarily always inspirational for positive reasons; sometimes people are inspired after traumatic experiences involving the sea. Here I will introduce stories of three women, all of whom contributed drawings to Popoki Friendship Story cloths between 2011 and 2016 in the context of disaster risk reduction or support activities. The first focuses on women inspired by a natural disaster, the 2011 Great East Japan Earthquake, to bring the sea back into their everyday lives. The second introduces a woman who has worked to address both the disastrous implications of Pacific nuclear testing, and the threat of nuclear war. The third is the story of a woman striving to save her island community from the impact of climate change by sharing stories with the world. In conclusion, the presentation will stress the importance of stories as a means of conveying and understanding cultural and natural heritage, and for the creation of places where everyone can feel safe in disaster risk reduction and disaster support. To be effective, we must work to recognize and change the ways in which our understandings of the sea are gendered, ensuring that women, girls and marginalized genders are included in in all aspects of life with the sea. This is the beginning of our collective story. I am looking forward to hearing your stories, too.







What makes You feel safe?

- · A 6-meter sea wall has been replaced by a 14.5-meter wall
- Q: Does it make you safe? A: Maybe....
- · Q: Does it make you feel

A: No!

· Being and feeling safe are not always the same or together



Kobe University **UNESCO** Chair

- UNESCO Chair: authorized Network for knowledge production and
- · Our Chair: Gender, Vulnerability and Well-being in Disaster Risk Reduction
- Partners: NKUST, Universiti Tinku Abdul Rahman (Malaysia), Gadja Madah University (Indonesia), Mae Fah Luang University (Thailand), Mercy Malaysia
- · Education Program & Research







ABOME ON LAG MARCHE ON LAG MARCHE ON LAG MARCHE

We choose peace.

Cross-cutting theme: Women and Crisis Preparedness. emergency response and early recovery

Negative effects of emergencies on women and girls directly intersect with UNESCO's central mission of peace

Education

- Facilitate continuity of learning, access to gender-responsive quality education, safe environments
- - Support women's participation in early recovery actions for reconstruction of educational and cultural infrastructures, cultural heritage
 - · Voices of women journalists, artists, scientists

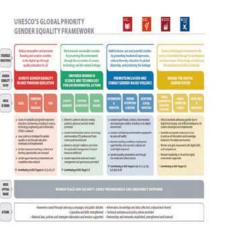
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· Management of risks to natural heritage from a gender perspective

Global Priority Gender Equality Framework & Cross-cutting theme

- · Gender Equality areas
 - Achieve gender equality in and through education
 - Empower women in science and technology for environmental action
 - · Promote inclusion and combat gender-based
 - · Bridge the digital gender divide
- Women, Peace and Security Crisis preparedness and emergency response
 - · Lead global advocacy
 - Produce and disseminate data and knowledge
 Create formal and informal learning and training

 - Bring direct support and technical advice to women and girls in conflict, emergency and crisis settings
 - Support creation and improvement of laws, policy and strategies
 - · Strengthen partnerships and networks



Let's reflect on gender, vulnerability and well-being in relation to the sea



Sender refers to socially constructed beliefs about what it means to be a woman or feminine man or masculine, both, or something different

ocial access to power and to perceived needs or assistance and/or protection.

Well-being refers a person's autonomy, health and their degree of satisfaction with their life or



Gender and the sea

- · Imagine who is working here
- · What are their genders?
- · Why do you think so?



Gender and the sea

- · Imagine who is working here
- · What are their genders?
- · Why do you think so?



Gender and the sea

- Imagine who is specializing in these fields
- · What are their genders?
- · Why do you think so?

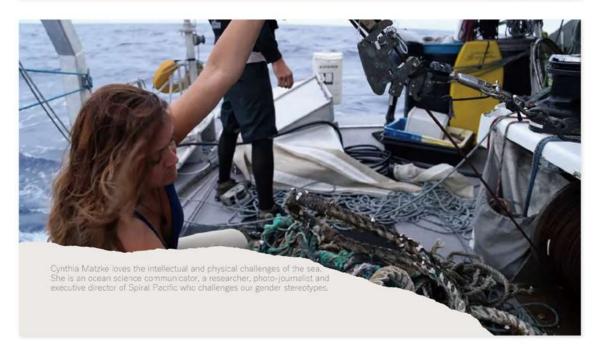
Gender and the sea Imagine who is sitting here What are their gender? Why do you think so?

Gender and the sea

- Why do we often associate ships, the sea, the earth and states with women?
- Why do we often associate shipping, fishing, ocean research with men, and service jobs such as fish processing with women?
- Do you ever think about LGBTQIA+ people and marine industries together?











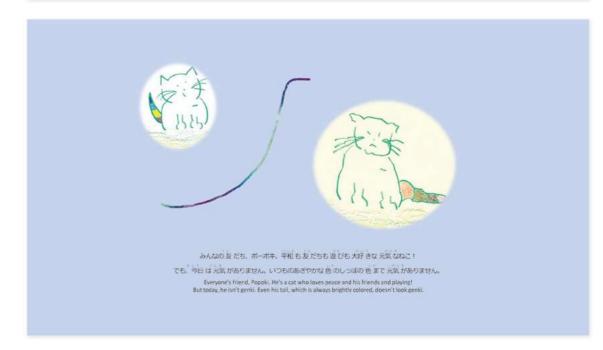




ボーボキの大好きな町のおはなし

The story of one of Popoki's favorite towns

文・絵 ロニー・アレキサンダー・Text & Illustrations by Ronni Alexander 2023.9



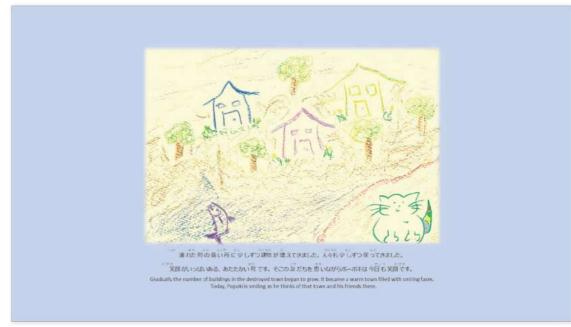


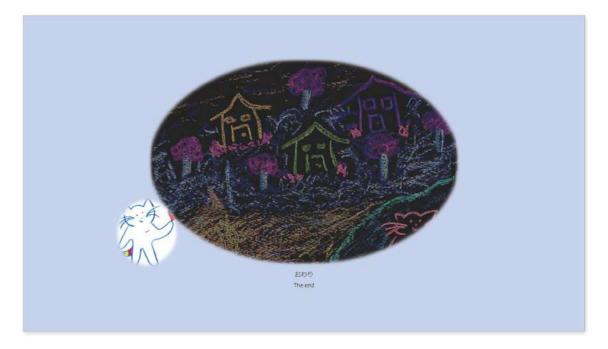




















Shake Hand activities

- · The women make small, while 'nude salmon'
- Supporters decorate them, and return them with a price and message
- Decorating salmon is fun for people of all ages, and helps to share to story of the tsunami, too



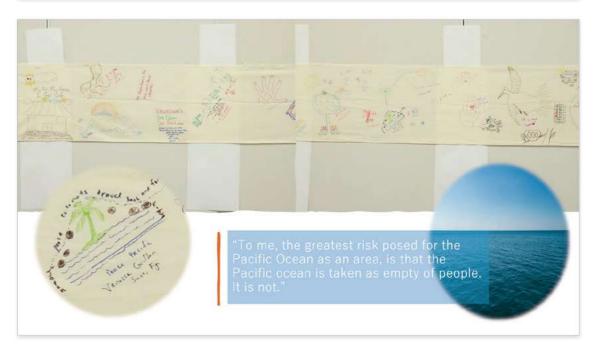


Women rebuilding community one stitch at a time

- · Taking back the ocean, taking back our lives
- "Our town is a fishing town, a salmon town. Salmon leave, but they come home. Our salmon will come home again, too. Let's wait for them together."

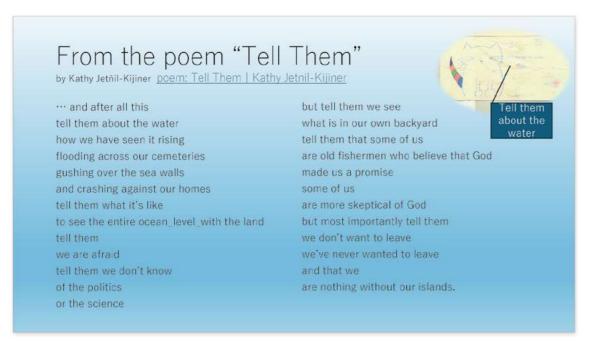








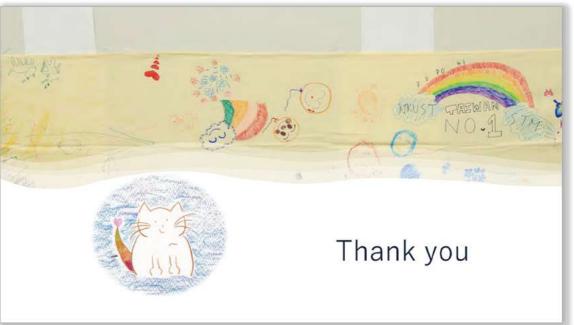






What is your story?

- This is the beginning of our collective story
- It is only through sharing our stories that we can create and maintain the intangible tool that make it possible for us to cope, survive and recover from disaster, human-made or otherwise, and make a better world for our children.



Keynote Speech 2:

The practice regional revitalization and sustainable development in Yong-An fishing community: A miraculous journey of young women-returning

蘇郁暄

簡歷

- · 美商永利澳門中國市場部 經理2年
- · 美商金沙集團環球市場部 資深經理 3年
- · 新加坡濱海灣集團環球市場部 資深經理 2年
- · 有限責任高雄市永安區新港社區合作社 經理 5年
- · 2020年 榮獲 農業部百大青農

Yu Syuan, Su (Mia)

Resume

- · Manager of the China Market Department at Wynn Macau, USA 2 years
- · Senior Manager of the Global Marketing Department at Sands Group, USA 3 years
- · Senior Manager of the Global Marketing Department at Marina Bay Group, Singapore - 2 years
- Manager of the Limited Liability Cooperative in the Yong'an District, Kaohsiung
 City 5 years
- · Awarded the Top 100 Young Farmers by the Ministry of Agriculture in 2020

永安漁村地方創生與永續發展的實踐: 返鄉女性青年的奇幻旅程

蘇郁暄

本次演講將介紹臺灣高雄市永安漁村於2016年寒害災後,由返鄉青年帶動地方創生與永續發展的實踐歷程。講者蘇郁暄正是其中一員,亦是積極推動社區與國際接軌的重要推手。本研究個案展現了一個典型沿海漁業聚落如何在災後轉型為具備創新力與韌性的永續社區。

永安漁村長期面臨高齡化、產業衰退及青年外流等挑戰。2016年寒害造成漁業重大損失,成為社區重新思考未來發展與產業重建的契機。在返鄉青年的號召下,社區集結地方居民與跨領域專業資源,展開涵蓋生產、文化與社會三大面向的重建與轉型行動,實踐以社區為核心的永續發展模式。

在產業重建方面,社區導入無毒養殖、低密度酵素養殖及循環經濟理念,強調環境友善與生態共生;並整合加工、包裝、物流與銷售資源,成立「新港社區合作社」,推出「尻海風」、「塭底撈」、「蘇班長安心石斑」等在地品牌系列產品,涵蓋加工品、伴手禮與文創商品,提升產業附加價值與品牌識別度。社區同時發展以漁村文化為核心的食農教育課程與深度旅遊體驗,並舉辦「尻海風漁夫生活節」,成功將地方知識轉譯為具參與感與共享性的公共價值。

在人才與社會面向,團隊推動「安青班」、設計在地青培模組,並與多所大學 合作開設跨域課程與行動研究機制,鼓勵青年回流與深度參與社區營造。此外,透 過品牌策略與數位行銷,永安產品成功拓展至新加坡、加拿大、澳門等國際市場, 實現「根留在地、眼向國際」的發展路徑。

此由青年女性主導、社區共創的實踐歷程,已獲多項肯定,包括國家人才發展獎、食農教育貢獻獎,並受邀於聯合國相關論壇發表,展現臺灣地方創生的國際能見度。永安以「Make Yong An Great Again」為口號,持續追求淨零轉型、社會創新與全球連結。此案例不僅彰顯青年返鄉行動者的領導力與創造力,也為面臨氣候變遷與人口變動挑戰的沿海社區提供具啟發性的永續發展路徑。

The practice regional revitalization and sustainable development in Yong-An fishing community: A miraculous journey of young women-returning

Mia Su

Abstract

This presentation will introduce the process of place-based revitalization and sustainable development in Yongan Fishing Village, Kaohsiung, Taiwan, following a cold snap disaster in 2016. The movement was led by young returnees to their hometown, including the speaker, Yu-Hsuan Su, who has been a key force in promoting both community development and international engagement. This case study highlights how a typical coastal fishing village transformed into an innovative and resilient sustainable community in the aftermath of disaster.

Yongan Fishing Village has long faced challenges such as population aging, industrial decline, and youth outmigration. The severe cold snap in 2016 caused significant losses to the local fishing industry, prompting the community to rethink its future and rebuild its economy. In response to the call of young returnees, the village mobilized local residents and cross-disciplinary resources to launch a series of reconstruction and transformation initiatives spanning three key dimensions: production, culture, and social cohesion. These efforts embody a community-centered model of sustainable development.

In terms of industrial reconstruction, the community introduced eco-friendly practices such as toxin-free aquaculture, low-density enzyme farming, and circular economy concepts, emphasizing environmental sustainability and ecological coexistence. By integrating resources for processing, packaging, logistics, and marketing, the community established the "Xingang Community Cooperative" and launched a series of local brands—including Kaohai Feng, Wendi Lao, and Captain Su's Safe Grouper—featuring processed foods, souvenirs, and cultural-creative products. These efforts have enhanced both the value-added potential and brand recognition of local industries. The community has also developed fishery culture-based food and agriculture education programs and immersive tourism experiences. Events such as the Kaohai Feng Fishermen's Life Festival have successfully transformed local knowledge into public value, fostering participation and a sense of shared identity.

In terms of talent development and social engagement, the team initiated the "An-Ching Program" and designed localized youth training modules. They also collaborated with multiple universities to establish interdisciplinary courses and action research mechanisms, encouraging young people to return and take an active role in community building. Furthermore, through effective branding strategies and digital marketing, Yongan's products have successfully expanded into international markets such as Singapore, Canada, and Macau—demonstrating a development path that is rooted locally while reaching globally.

This youth-led, community co-creation initiative—spearheaded by a young woman—has received widespread recognition, including the National Talent Development Award and the Food and Agriculture Education Contribution Award. It has also been featured at United Nations-related forums, showcasing Taiwan's place-based revitalization efforts on the international stage. Under the slogan "Make Yong An Great Again," the community continues to pursue net-zero transformation, social innovation, and global connectivity. This case not only highlights the leadership and creativity of young returnees but also offers an inspiring model of sustainable development for coastal communities facing the dual challenges of climate change and demographic shifts.











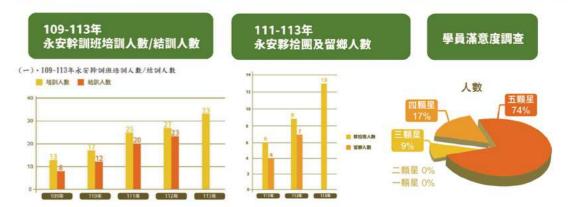








Make Yong An Great Again 帶領永安航向五大目標 培訓人數成長率10% 留員率80% 學員滿意度91%































在聯合國SDGS議程中,一開頭寫一段振奮人心的話

「在這段集體走向未來的路上, 我們承諾決不讓任何人脫隊!」

"As we embark on this collective journey, we pledge that no one will be left behind."

這句話意味著

所有人無論你/妳身處在地球的任何角落, 都應重新檢視自己的生活,

透過SDGS來看自己身處的環境,

相信你我一定能夠更加看淸這個社會的現實, 和我們努力的方向,

了解SDGS是讓世界變得更美好的第一步。



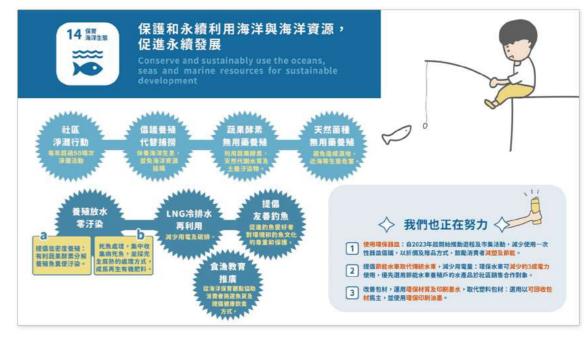






















● 節能減碳宣導

● 廢棄物集中管理

● 維護生物多樣性

1 銀石沙灣:計画業長已經會力積極調訊

2 永新灣:社區歷訊已初日为機師報道

每個人的關心, 都能夠拯救世界!

ESG授資

3 新港好地方:自国场专用已相申超 进行核结组。





- 杜絕過度勞力
- 男女同工同酬 ● 商品的安全性
- 職業道德 ● 經營的透明性
 - 公正競爭

- ◇ 我們也正在努力 ◇
- 1 與在地弱勢團體、機構合作,彼此學習、相互成長。
- 2 培養消費者的<mark>良知消費能力</mark>,將環境和社會問題納入消費時的考量。
- 3 減少在地企業所造成的碳排放量、減低碳足跡的形成



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Keynote Speech 3: Maritime and Women

蔡伯言

目前職務:交通部航港局就業發展科長

歷:交通部航港局馬公航港科、南部航務中心監理科、船員組測驗規劃科、

就業發展科

教育背景:國立高雄科技大學 航運管理系碩士

國立台北科技大學工業工程系學士

職業目標:運用多年累積的專業技能與經驗,致力於船員生涯規劃及相關法規制定

Po Yen, Tsai

Current Position

Chief of Seafarer Employment Development, Maritime and Port Bureau, Ministry of Transportation and Communications.

· Experience

Served in the Maritime and Port Bureau across various departments, including Magong Maritime Affairs Division, Southern Maritime Affairs Center's Supervision Division, Seafarer Examination Division, and Seafarer Employment Development Division.

Educational Background:

- Master's Degree in Maritime Management, National Kaohsiung University of Science and Technology.
- o achelor's Degree in Industrial Engineering, National Taipei University of Technology.
- · Career Objectives: Utilize years of accumulated professional skills and experience to focus on seafarer career planning and related regulation formulation.

海運與女性 Maritime and Women

蔡伯言 Po-yen, TsaiPo-yen, Tsai

摘要

在全球勞動人口縮減與人口老化的趨勢下,女性投入傳統男性主導的海運產業已成為重要趨勢。海運關聯產業日益多元,女性從行政管理延伸至船舶操作與技術研發,顯示性別角色的轉變。國際統計顯示,女性在海運業勞動力中僅占約2%,但岸上職位女性比例已達50%,臺灣女性船員比例(4.12%)亦高於全球平均。近五年航海人員測驗中,女性合格人數穩步上升,2025年更創歷史新高。交通部航港局積極推動性別友善政策、職涯發展計畫與國際合作,提升女性能見度與參與度。女性參與海運不僅促進性別平等,更為產業注入創新與永續發展的動能。

Abstract

Amid global trends of declining labor force and population aging, increasing female participation in the traditionally male-dominated maritime industry has become essential. The maritime sector has diversified, with women taking on roles beyond administration, including ship operations and technical development. International statistics show that women represent only about 2% of the maritime workforce, though their participation in shore-based roles has reached 50%. In Taiwan, the proportion of female seafarers (4.12%) exceeds the global average. Over the past five years, the number of women passing seafarer qualification exams has steadily increased, reaching a record high in 2025. Taiwan's Maritime and Port Bureau has actively promoted gender-friendly policies, career development programs, and international cooperation to enhance women's visibility and participation. Female involvement in the maritime sector is not only a reflection of gender equality but also a driving force for innovation and sustainable development in the industry.

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海運與女性 (Maritime and Women)

📥 主講人: 蔡伯言 (POYEN TSAI)

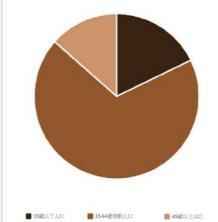


全球勞動力正面臨嚴峻挑戰,出生率下降導致15歲以下 人口僅占17.8%且持續減少:醫療進步使65歲以上人口增 至13.5%,老齡化問題日益嚴重。

這些趨勢在全球各地皆可見:歐洲人口呈現負成長、亞 洲部分國家邁人高齡社會、北美洲依靠移民支撐勞動力 ,僅非洲地區維持人口正成長。勞動人口的減少使得女 性參與勞動市場變得更加重要,尤其是在傳統以男性為 主的海運事業。



全球勞動力趨勢



全球人口結構正在發生重大變化,勞動人口比例受到雙重壓力。 一方面,出生率下降導致年輕人口減少;另一方面,醫療技術 進步使老年人口比例上升。這種「人口剪刀差」現象對勞動力 市場造成嚴重壓力。

各大洲呈現不同的人口發展趨勢:

歐洲已進入人口負成長階段

亞洲多國雖仍保持正成長但老齡化加速。

北美洲主要依靠移民維持勞動力

非洲則是目前全球唯一保持穩定人口正成長的地區。



海運關聯產業與女性參與

產業多元化

海運業滿蓋航運公司、港口管理、船舶製造與維鋒、物流與供應鏈管理等 多個領域。

角色轉變

女性角色從傳統行政管理、法規制定、擴展至船舶操作、航運技術研發等 專業領域。

政策支持

臺灣政府與企業積極推動性別平等政策,航港局與大學合作開設航海專業

國際海事組織推動「女性海事專業人才發展計畫」,促進全球女性在海運

隨著科技塊步與產業轉型,女性在海運業的參與度逐漸提高。不僅是在傳統的行政崗位,越來越多女性開始在技術性和管理性崗位展現專業能力,為海運產業 注入新的活力與創新思維。

國際海運勞動市場女性參與比例

2%

全球海通業女性比例 根據IMO與WISTA別表,全址海運業女性勞動力占比約2%

50%

岸上喊位女性比例 海洋法、海上切除、蛋杏行就等艰峻女件比例被帮

39%

中階管理職女性比例 全球的39%的女性在海道集中擔任中跨管理職

7.5%

全球女性海昌比例

國際和經公會報告關係·計畫在未來三年內提升至12%

近年來,國路乘邊東逐步都創性於平等。許多企業同意時用女性藉任者和職位。數於為上工作的女 也上同小声樂店。信用上田國職也的女性參與從已傳載各美十。國際經典再之筆正據晚頭近計畫, 希望在未來晚時內大輔提览女性化海運動的參與從



近五年航海人員測驗女性人數比較

1 ____ 2021年

女性合格人数闸始橱著增加,但比例仍低於15%

2 ____ 2022年

女性合格比例達到16.96%。創下當時新高

3 ____ 2023年

女性參與人數持續增加,但比例略有下降

2024年

女性合格人數穩定成長·比例維持在16%左右

5 ____ 2025年

女性合格人數達33人,占比16.92%,接近歷史最高點

根據最新數據,2025年第一次航海人員測驗共有195人合格,其中女性33人,創下歷年 新高·占比達16.92%。雖然女性合格人數逐年增加·但仍未突破2022年最高占比

過去五年,女件参加航海人資測驗的比例雖有波動,但整體趨勢向上。政府與學術機 橋的努力・使得更多女性願意投入航海職業・展現専業能力・

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臺灣與國際海運產業女性人數比較 臺灣現況 歐洲國家 臺灣女性船員比例約14.12%。高於全球 挪威、丹麥等國因性刑平權政策。女性 亞洲地區 全球平均 面臨傳統觀念與職場環境挑戰・女性比 全球船員中女性僅占約2% 网络强幅低

在全球範圍內,女性在海運業的比例仍然躺低,臺灣的女性船員比例相較國際平均略高,但仍有提升空間。歐美國家因性別平權政策推動,女性在海運業的比例較高,甚至

相較之下,亞洲地區仍而臨傳統觀念與職場環境核戰,女性在海運業的發展仍需更多支持與政策保障。文化因素與社會期待仍是影響女性選擇海運職業的重要因素。



女性在海運業面臨的挑戰



船上設施與政策多以男性為主要考量,未能完全滿足女性階求。在職業發展方面,女性在意酔管理職位的比例仍然偏低,替升道路相對困難。這些挑戰需要產業、政 府與社會共同努力解決。

未來發展與機會



海運業的未來發展為女性提供了更多機會。隨著科技進步、船舶操作逐漸數位化與自動化、降低了傳統上對體力的要求、創造了更多適合女性的工 作機會。教育機構與企業合作提供更多專業培訓與實習機會、幫助女性獲得必要的技能與經驗

政府與國際組織正在制定更多支持政策,包括彈性工作安排、育兒支持等,幫助女性平衡工作與家庭。專業網絡的建立也為女性提供了寶貴的認驗 分享與職業指導、幫助她們在海運業中取得成功。



結論與展望

● 多元價值

女性參與為海邊業帶來多元視角與創新思維,提升整體競爭力



溢 持續成長

女性在海運業的參與度雖有提升,但仍有很大的成長空間



需要產業、政府與社會共同努力、創造更友善的環境

會 未來展望

期待更多女性投入海運業、為全球航運帶來新的活力與視野

女性在海運業的參與不僅是性別平等的展現,更是產業創新與發展的關鍵。多元的視角與思維方式能夠幫助海運業應對複雜的全球挑戰,提升整體競爭力 。雖然折年來女性參閱度有所提升,但與理想的性別平衡仍有距離。

實現真正的性別平等需要產業、政府與社會的共同努力。通過教育、政策支持與文化轉變,我們能夠創造一個更加包容與多元的海蓮產業。我們期待未來 有更多女性投入海運業,為全球航運帶來新的活力與視野。謝謝大家!



RESEARCH PRESENTATIONS: GENDER, VULNERABILITY, AND WELL-BEING IN DISASTER RISK REDUCTION SUPPORT

Gendered Vulnerability and Climate Resilience: Female Entrepreneurship along the Mekong River in Chiang Rai, Thailand Reni Juwitasari, Maya Dania

Male Perspective on the Use of Renewable Energy: A Case Study on Batang Lupar Estuary

Ooi Kuan Tan, Ren Jie Chin, Yuk Feng Huang, Kok Weng Tan, Yee Ling Lee, Ming Han Lim

Comparative Study of Disaster Memory Transmission between Japan and the Philippines: Cases of Kobe City and Tacloban City

Takumi Koike, Miyoko Watanabe, Kyoko Okamoto, Bethany Meidinger, Noa Yokogawa, Aiko Sakurai, Faustito A. Aure

Inspiration for Female Seafarers from the Offshore Wind Industry Jhih-Sian Sun, Hui-Lung Yu

Gendered Vulnerability and Climate Resilience: Female Entrepreneurship along the Mekong River in Chiang Rai, Thailand

Reni Juwitasari, Maya Dania DRES-ARCID, School of Social Innovation, Mae Fah Luang University

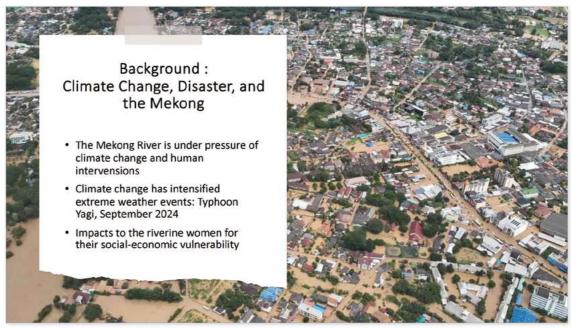
Abstract

Climate change and intensified hydrological disasters are reshaping the vulnerability landscape of riverine communities along the Mekong River, with profound gendered consequences. This study examines how Mae Ying women entrepreneurs in Ban Had Krai Village, Chiang Khong District, Chiang Rai Province, are impacted by the intersecting pressures of environmental degradation, climate-induced flooding, and socio-economic marginalization, and how they develop strategies of resilience in response. Recent flood events, including the September 2024 floods in Chiang Rai caused by Typhoon Yagi, was among the most severe in decades, have disrupted river ecosystems, eroded livelihoods, and exposed the fragile dependency of female-led economies on natural cycles. Using an ecofeminist framework, particularly Haraway's concept of "Making Kin," and a mixed-methods exploratory sequential design, the study draws from interviews with ten female entrepreneurs and surveys with fifty community members. Findings reveal that climate change reduces the availability of "Kai" (locally named green river algae), a vital resource for local female entrepreneurship, while floods damage infrastructure, limit market access, and intensify financial exclusion. In response, Mae Ying women engage in adaptive strategies, including cross-border trade, Kai-based product innovation, and festival-driven market expansion. However, these resilience efforts are constrained by the "second glass ceiling", a convergence of gender inequality and environmental vulnerability. This research calls for integrated policies that address disaster risk reduction from climate action (SDG 13), promote gender equality and women's empowerment (SDG 5), and support sustainable economic opportunities (SDG 8) in climate-vulnerable regions. Strengthening the resilience of riverine women entrepreneurs is essential not only for achieving localized climate adaptation but also for advancing equitable and sustainable development across the Mekong Basin.

Keywords: Flooding, Gendered Vulnerability, Female Entrepreneurship, Mekong River, Sustainable Development Goals (SDGs)

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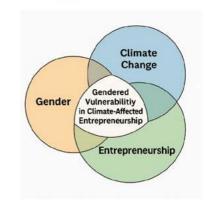


Problem Statement: Gendered Disaster Vulnerability

- · Climate change is not gender-neutral.
- Women, especially those dependent on natural resources for their livelihoods, experience the consequences of environmental change more severely. However, existing disaster risk frameworks often overlook these differentiated vulnerabilities.

Thus, our aim was twofold:

- First, to analyze how the river women (locally called "Mae Ying") are impacted by the convergence of climate-induced disasters, ecological degradation, and socio-economic marrialization.
- Second, to identify and understand the adaptive strategies they employ to sustain their livelihoods.



Theoretical Framework: Ecofeminism, Second Glass Ceiling, and SDGs

Ecofeminism reveals how the oppression of women and the exploitation of nature are deeply interconnected, often structured by the same patriarchal and capitalist systems.

In parallel, our research supports global commitments under the Sustainable Development Goals:

- · SDG 5: Achieving gender equality and empowering all women and girls.
- SDG 8: Promoting inclusive and sustainable economic growth, and decent work
- SDG 13: Taking urgent action to combat climate change and its impacts.









Methodology: Mixed-Methods Approach

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We utilized a mixed-method exploratory sequential design.

 Phase 1 involved qualitative data collection through indepth semi-structured interviews with ten female entrepreneurs.

These interviews allowed rich, narrative explorations of their lived experiences.

 Phase 2 was quantitative, using structured surveys administered to fifty women.
 The survey gathered demographic data, entrepreneurial challenges, perceptions of environmental changes, and adaptive strategies.

Exploratory Sequential Design

Phase 1: Qualitative Data Collection
• Interviews

Quantitative

Phase 2: Quantitative Data Collection

Surveys

Key Findings: Climate Impacts on Riverbased Livelihoods

Our findings reveal that climate change is disrupting the ecological base upon which Mae Ying livelihoods depend.

Specifically:

- The irregular flood-drought cycle reduces the local green algae (locally named as Kai) growth.
- · Flash floods during unexpected periods destroy foraging grounds.
- Infrastructure damage impedes access to local and cross-border markets

Cultural Heritage Under Threat

UNESCO (2019) notes that traditional ecological knowledge systems, such as Kai harvesting and processing, represent intangible cultural heritage vital for community identity and social cohesion.







Gendered Vulnerability : Structural Challenges

The Mae Ying women face what we conceptualize as the "second glass ceiling."

This ceiling is compounded by:

- Gendered barriers: limited access to capital, markets, and leadership roles.
- Environmental vulnerability: ecological collapse, resource depletion, and climate uncertainty.

Adaptive Strategies: Resilience in Practice



Despite these compounded vulnerabilities, Mae Ying women are not passive victims. They have crafted innovative adaptive

- strategies, including:

 Cross-border collaboration: Building informal trade networks with women entrepreneurs across the Laos border, bypassing national market barriers.
- Kai-based product innovation: Developing therapeutic and nutritional products (such as Kai chips, supplements, and snacks) to tap into health-conscious markets.
- Festival-driven market expansion: Utilizing seasonal events to attract tourists, showcase products, and diversify

These strategies show agency, creativity, and resilience

Policy Recommendations: Toward Gender-Responsive Resilience

Our study emphasizes the urgent need for **integrated, gender-responsive climate adaptation strategies**, specifically:

- Mainstream gender considerations into disaster risk reduction and climate action plans (SDG 13).
- Expand women's access to finance, education, and crossborder markets to achieve economic empowerment (SDG 8).
- Design ecological restoration programs that involve women as knowledge holders and leaders (SDG 5).

The lived experiences of Mae Ying women show that resilience is both an ecological and feminist project.









Conclusion: Resilience, Justice, and the Future

In conclusion, the story of Mae Ying women along the Mekong River reveals a powerful truth:

- Climate resilience cannot be achieved through technical fixes alone.
- It requires recognizing gendered vulnerabilities, valuing indigenous knowledge, and building solidarities across human and ecological communities.
- By strengthening the resilience of riverine women entrepreneurs, we advance not just local livelihoods, but a broader vision of justice and sustainability for the Mekong region.

Male Perspective on the Use of Renewable Energy: A Case Study on Batang Lupar Estuary

Ooi Kuan Tan^{1,2,3*}, Ren Jie Chin^{1,2}, Yuk Feng Huang^{1,2}, Kok Weng Tan^{1,4}, Yee Ling Lee^{1,2}, Ming Han Lim^{1,2}

Abstract

The increasing reliance on fossil fuels has contributed to global warming and climate change, leading to significant greenhouse gas emissions worldwide, including in Malaysia. Batang Lupar, a rural area in Sarawak, faces these challenges as well. Additionally, the region struggles with electricity shortages due to high demand, particularly during peak periods, with men often being the primary breadwinners in families. Consequently, it is crucial for the Sarawak state government to address these issues. This study aims to explore the male perspective on the implementation of renewable energy in Batang Lupar. For this quantitative research, a questionnaire survey was conducted with 50 male respondents through face-to-face interviews to gather their opinions on renewable energy adoption in the area. The data collected was analyzed using SPSS for the descriptive study. The findings revealed that male respondents in Batang Lupar had a low perception of the use of renewable energy, which could affect the public acceptance of such initiatives. In conclusion, the study demonstrates that the perception of men, who are often the primary decision-makers in households, significantly impacts the acceptance and adoption of renewable energy in Batang Lupar. The insights gained from this research can guide the Sarawak state government in developing effective energy policies and strategies to promote renewable energy use in the region.

Keywords: Perspective, Male, Renewable Energy, Sarawak

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1.Introduction

Renewable energy, commonly known as clean energy, refers to energy derived from natural resources that can be replenished naturally over time, ensuring its sustainability for the long term. According to Shinn (2019), renewable energy sources include solar energy, wind energy, hydropower, biomass, geothermal energy, and marine energy. These energy alternatives provide numerous benefits, including being cost-effective, affordable, environmentally sustainable, and less harmful to the planet compared to traditional fossil fuels.

The Batang Lupar Estuary, like many other estuarine ecosystems, is highly vulnerable to the impacts of climate change and environmental degradation. These threats, coupled with increasing concerns over energy sustainability, highlight the importance of exploring renewable energy solutions in the region. Investigating renewable energy adoption in the Batang Lupar Estuary is essential to overcoming the energy challenges faced by local communities, as well as mitigating the environmental impacts caused by conventional energy sources. Renewable energy options, such as solar, wind, and hydropower, provide cleaner alternatives to fossil fuels, reducing carbon emissions and the negative effects on the environment (Shinn, 2019). This shift to renewable energy offers an opportunity to support sustainable energy practices while addressing the region's growing energy demands.

Focusing on the perception of renewable energy among the male residents, who is the breadwinner of the family of Batang Lupar Estuary provides valuable insights into the role of community engagement in promoting sustainable energy transitions. The local male perception to embrace renewable energy are crucial factors in the successful adoption of such technologies. By examining their perspective, the study can help inform policymakers and energy developers on effective strategies to foster greater acceptance of renewable energy solutions. According to the United Nations (2023), community involvement in energy transitions is vital for the long-term success of renewable energy initiatives, as it enhances public perception and encourages active participation.

Furthermore, the findings of this study can inform strategies to improve public education and readiness for renewable energy adoption in Batang Lupar. Building a well-informed and engaged community will empower residents to make informed decisions about energy usage, thereby promoting sustainability. Educating the community on the benefits and practical applications of renewable energy can help shift perceptions, increase acceptance, and drive the adoption of cleaner energy solutions. Ultimately, this research emphasizes the importance of fostering a collaborative approach to renewable energy adoption, where both policymakers and local communities work together to create a sustainable future.

Malaysia, located between 1° and 7° North of the Equator, is rich in renewable energy resources that have yet to be fully exploited. Despite experiencing robust economic growth, with a consistent GDP increase of 4.6% in 2011, which is notable among ASEAN

nations (Trading Economics, 2011), Malaysia's overall energy consumption has been rising rapidly. However, experts predict that the country's natural gas reserves will be depleted in approximately 70 years, with oil and coal expected to be exhausted in 50 and 250 years, respectively (International Energy Agency, 2020). In response to these projections, the Malaysian government has adjusted its energy strategy to address concerns surrounding energy security and the sustainability of fossil fuel consumption.

Malaysia's economic growth has heavily relied on fossil fuels, which include non-renewable resources such as coal, gas, and oil. These energy sources are finite and will eventually run out, making the reliance on them unsustainable. Additionally, the combustion of fossil fuels generates large amounts of greenhouse gases, particularly carbon dioxide (CO₂), which contribute significantly to climate change, rising sea levels, and disruptions to ecosystems (Intergovernmental Panel on Climate Change [IPCC], 2021). The environmental consequences of fossil fuel use are not only detrimental to the climate but also pose risks to human health and biodiversity. Fossil fuels, thus, are both economically and environmentally unsustainable in the long run.

Malaysia primarily depends on petroleum crude oil and natural gas as its main sources of energy (Energy Commission, 2019). However, the traditional fossil fuel industry has faced a decline due to factors such as unstable prices, supply shortages, and environmental impacts. These challenges have ushered in the era of renewable energy, a transition that is becoming increasingly unavoidable. As noted by Abotah and Daimn (2017), in 2017, Malaysia's energy consumption was predominantly sourced from non-renewable resources, with renewable energy accounting for only about 5.8% of the total. In response to these issues, the Malaysian government has set a target to achieve a 20% share of renewable energy in the country's overall power generation by 2025 (Choong, 2019).

Malaysia holds significant potential for renewable energy development, with abundant resources in solar, wind, hydro, biogas, and biomass energy (Abdullah et al., 2019). Despite this, fully harnessing these resources will require substantial government effort in terms of offering incentives and establishing consistent and effective policies. As of now, Malaysia's renewable energy focus is primarily on solar photovoltaic (PV) energy. According to Abdullah et al. (2019), Tenaga Nasional Berhad (TNB), the national energy utility and a government-linked company, has created a subsidiary called TNB Renewables Sdn Bhd (TRE). TRE is responsible for managing both large-scale solar projects and smaller renewable energy initiatives, including those with capacities of less than 30 MW. These smaller projects involve rooftop solar systems, biomass and biogas facilities, Battery Energy Storage Systems (BESS), microgrids, and Virtual Power Plants (VPPs). TRE operates as an asset holder, investor, and facilitator of renewable energy projects, all aimed at achieving Malaysia's renewable energy target of 20% by 2025 (Abdullah et al., 2019).

To mitigate these challenges, substantial reductions in greenhouse gas emissions are

essential. Renewable energy presents a viable alternative, with various sources such as hydroelectric, wind, solar, and marine energy (including wave and tidal energy) offering cleaner energy solutions (United Nations Environment Programme [UNEP], 2022). Renewable energy technologies are environmentally friendly and sustainable, helping reduce the adverse effects of climate change.

2. Study Area

Batang Lupar is a region in Sarawak with a population of 43,072 residents (Siti Rabiatun Agustini & Deva, 2023). The area is predominantly recognized for the Batang Lupar River (Figure 1), one of the most significant rivers in Sarawak. This river serves as a vital waterway, linking Kuching and Sri Aman. In the context of Batang Lupar, environmental issues such as deforestation add another layer of complexity. Deforestation in Borneo, driven by agriculture, logging, and infrastructure development, is a significant concern. The loss of primary and old-growth forests reduces biodiversity and contributes to climate change, as trees, which act as carbon sinks, release stored CO₂ when cut or burned (World Wildlife Fund, 2021). This contributes further to global warming, affecting air quality and local weather patterns.

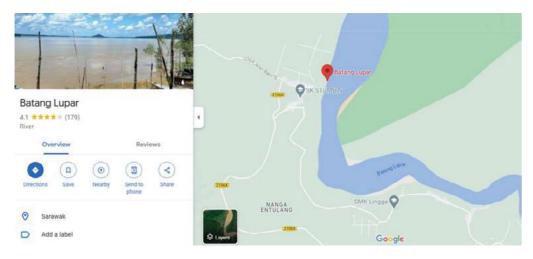


Figure 1. Batang Lupar River (Google Map)

Moreover, Sarawak, being a large and diverse state, experiences disparities in infrastructure development, with some areas, including Batang Lupar, facing issues with electricity supply. Electricity shortages in these regions can be caused by infrastructure limitations, maintenance, and increased demand during peak periods (Sarawak Energy, 2020). Batang Lupar Estuary, despite its potential for renewable energy development, faces challenges in implementing these solutions due to the local community's perspective. The residents' views on renewable energy and their willingness to adopt such technologies are critical to the success of these initiatives.

Perception is a cognitive process through which individuals interpret their sensory experiences, forming either positive or negative impressions (Erin & Maharani, 2018).

This process involves several stages, including selection, analysis, and response. Asmara et al. (2022) describe public perception as a complex and subjective process, in which individuals evaluate uncertainty, shaped by their attitudes, intuition, expectations, experiences, and contextual information. Public perception can significantly influence the success or failure of individuals, organizations, or ideas. Importantly, it does not always rely on accurate knowledge or factual information but is often influenced by biases, emotions, and misinformation. Furthermore, public perception is dynamic and can change over time due to new events, emerging information, and evolving social norms.

Public perception plays a critical role in determining the acceptance of renewable energy initiatives, particularly in areas like Batang Lupar Estuary. When the public perceives renewable energy as cost-effective, reliable, and environmentally friendly, it is more likely to support and accept the implementation of such projects. Positive perceptions of renewable energy can foster greater community engagement, leading to higher levels of public endorsement and participation in renewable energy programs. In contrast, negative perceptions, such as concerns regarding the cost of renewable technologies or their reliability, can create significant barriers to adoption. These concerns may cause resistance to change and hinder efforts to transition from traditional energy sources to renewable ones. Understanding how the public views renewable energy is essential for designing effective strategies that address these perceptions. For example, if the community associates renewable energy with high costs or unreliable performance, these concerns must be addressed through education, transparency, and demonstrations of the long-term benefits of renewable technologies. Conversely, highlighting the environmental advantages of renewable energy, such as reduced greenhouse gas emissions and sustainable resource use, can shift public opinion in favor of these solutions.

By assessing male perceptions, policymakers and stakeholders can identify specific barriers to acceptance and develop targeted strategies to overcome them. This might involve providing incentives, offering subsidies, or implementing awareness campaigns to inform the public about the economic, environmental, and social benefits of renewable energy.

3. Methodology

This study highlights the perspective of the male respondents as the backbone of the family on the use of renewable energy at Batang Lupar Estuary, Sarawak. A questionnaire survey was chosen as the data collection method to gather responses from residents regarding the implementation of renewable energy in Batang Lupar Estuary. The questionnaires were distributed through face-to-face interviews to collect data directly from the respondents. To ensure the relevance of the data, the survey specifically

targeted residents of the Batang Lupar area.

According to Haneem et al. (2017), descriptive analysis is a statistical method often employed before conducting more advanced statistical tests or complex modeling. Its primary function is to summarize and characterize the data. Descriptive analysis is frequently used to evaluate the frequency distribution and central tendency of data. The loss of primary and old-growth forests reduces biodiversity and contributes to climate change, as trees, which act as carbon sinks, release stored CO₂ when cut or burned (World Wildlife Fund, 2021). This contributes further to global warming, affecting air quality and local weather patterns.

4. Results and discussion

In order to assess the male respondents in the questionnaire survey, questions were designed to measure perception from the respondents. Due to the adaptation of ordinal scale in this study, respondents are asked to answer the questions with 5 possible answers which consists of Strongly Disagree, Disagree, Neutral, Agree or Strongly Agree.

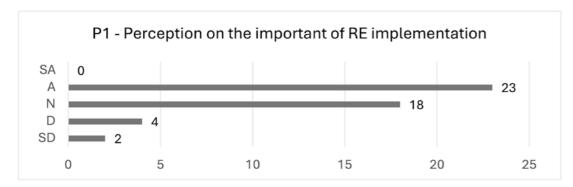


Figure 2: Perception on the important of renewable enery implementation at Batang Lupar Estuary.

The survey included 50 respondents, and the results for item Perception on the important of renewable energy implementation at Batang Lupar Estuary (P1) showed in Figure 2 were analyzed using a Likert scale from 1 to 5. The distribution of responses show 2 respondents strongly disagreed (4% of the total), 4 disagreed (8%), 18 were neutral (36%), 23 agreed (46%), and none strongly agreed (0%). A closer look at the data shows that the majority of respondents (46%) agreed with the statement in P1, while no one strongly agreed. A significant portion, 36%, remained neutral, indicating a moderate level of uncertainty or indifference toward the statement. A smaller group of respondents disagreed (8%), and only 4% strongly disagreed, reflecting a relatively small percentage who rejected the statement outright. Overall, the results suggest a general agreement with the statement, as the largest percentage of respondents leaned toward agreement. However, the presence of a substantial neutral group indicates that some respondents did not feel strongly one way or the other. This distribution points to a moderate consensus with some room for varied opinions, with the majority agreeing but not overwhelmingly so.

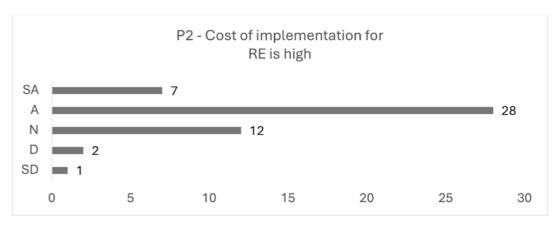


Figure 3: Perception on the cost of renewable enery implementation at Batang Lupar Estuary

The analysis of item P2 on the cost of renewable enery implementation at Batang Lupar Estuaryas shown in figure 3, which assesses respondents' perception of the high cost of implementing renewable energy at the Batang Lupar estuary, reveals a diverse range of opinions. Using a Likert scale (1 to 5), where 1 represents strongly disagree and 5 represents strongly agree, the results show that the majority of respondents acknowledge the high cost. As shown in Figure 3, out of 50 respondents, 28 (56%) agree, and 7 (14%) strongly agree, indicating that 70% of participants perceive the cost as significant. Meanwhile, 12 respondents (24%) are neutral, suggesting a lack of strong opinion or uncertainty regarding the financial burden. Only 3 respondents (6%) disagree (2 disagree, 1 strongly disagree), meaning very few challenge the notion of high costs. The dominance of agreement (70%) implies general awareness that renewable energy projects in this region require substantial investment. The 24% neutrality might indicate a lack of detailed understanding or ambivalence about cost implications. The minimal disagreement (6%) suggests that cost concerns are widely accepted. These findings highlight cost as a major perceived barrier to renewable energy adoption in the Batang Lupar estuary, emphasizing the need for financial planning, government incentives, or innovative funding models to support implementation.

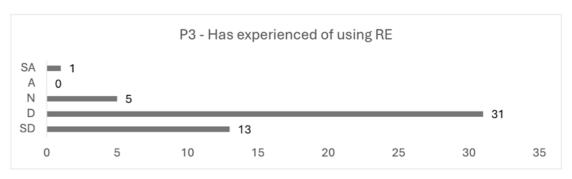


Figure 4: Experience using renewable energy at Batang Lupar Estuary

Figure 4 shows the respondents experience in using renewable energy at Batang Lupar Estuary The survey question P3 - Having experience of using renewable energy at Batang Lutar Estuary aims to measure respondents' familiarity and direct involvement with renewable energy (RE) systems in that specific location. Out of 50 total respondents, 31 individuals (62%) selected "Disagree" (D), while 13 respondents (26%) chose "Strongly

Disagree" (SD). This suggests that a significant proportion of the participants do not have prior experience with renewable energy (RE) in this location. A smaller portion of respondents expressed uncertainty or neutrality regarding the statement. Five individuals (10%) selected "Neutral" (N), indicating that they might have limited or indirect knowledge of renewable energy at Batang Lupar Estuary but are not confident enough to confirm their experience. On the other hand, only one respondent (2%) selected "Strongly Agree" (SA), suggesting that there is an extremely low number of individuals who feel confident about their experience with renewable energy in this area. Interestingly, no respondents (0%) selected "Agree" (A), reinforcing the idea that familiarity with renewable energy at Batang Lupar Estuary is quite rare among the surveyed group.

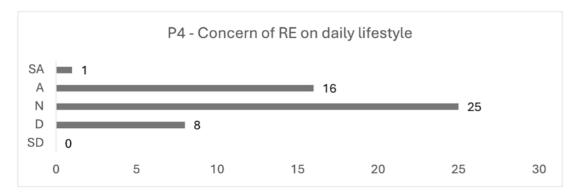


Figure 5: Concern of the implementation of renewable energy towards the lifestyle at Batang Lupar Estuary

The survey question P4 - Concerned about the implementation of renewable energy towards the lifestyle at Batang Lutar Estuary as shown in Figure 5 aims to assess how individuals perceive the impact of renewable energy (RE) on their daily lives. The survey results provide insight into the level of concern regarding the impact of renewable energy (RE) on daily lifestyle at Batang Lupar Estuary. The findings indicate a mixed perception among respondents, with most individuals adopting a neutral stance on the matter. A total of 25 respondents (50%) selected "Neutral" (N), indicating that while they are aware of the potential effects of renewable energy, they neither express significant concern nor dismiss its impact. This suggests that many individuals may lack sufficient information or direct experience with renewable energy initiatives to form a strong opinion. On the other hand, 16 respondents (32%) selected "Agree" (A), signifying that nearly one-third of the participants are indeed concerned about how renewable energy might influence their lifestyle. This could stem from uncertainties regarding energy policies, infrastructure changes, or potential costs and benefits associated with transitioning to renewable energy sources. A smaller group of 8 respondents (16%) selected "Disagree" (D), suggesting that they do not believe renewable energy has or will have a significant impact on their lifestyle. This could indicate that they either see RE as a positive and non-disruptive change or that they believe the transition will not directly affect them. Only 1 respondent (2%) selected "Strongly Agree" (SA), showing a very low level of strong concern about RE's effect on daily life. Notably, no one selected "Strongly

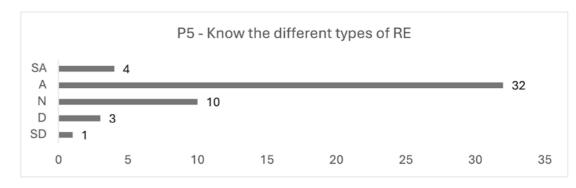


Figure 6: Know the different types of renewable energy that can be used at Batang Lupar Estuary

As shown in Figure 6, the survey question P5 - Know the different types of renewable energy that can be used at Batang Lupar Estuary provide insight into respondents' familiarity with renewable energy sources. A total of 50 respondents participated in the survey, and their responses were distributed across five categories. The majority of respondents 32 individuals (64%) selected "Agree" (A), indicating that they are familiar with the various types of renewable energy that can be utilized at Batang Lupar Estuary. This suggests a high level of awareness about renewable energy options among the participants. A smaller but still notable proportion 4 respondents (8%) chose "Strongly Agree" (SA), reinforcing that a subset of the respondents feel highly confident in their knowledge of renewable energy types. However, 10 respondents (20%) selected "Neutral" (N), implying that they may have some awareness but are unsure about the full range of renewable energy sources available for use in the area. This suggests a knowledge gap that could be addressed through education or awareness programs. On the other hand, 3 respondents (6%) selected "Disagree" (D), indicating that they do not believe they have adequate knowledge about the different types of renewable energy. Additionally, 1 respondent (2%) selected "Strongly Disagree" (SD), demonstrating a complete lack of awareness on the subject.

5. Conclusion and recommendations

This study highlights the critical role of male perceptions in the adoption of renewable energy in Batang Lupar, Sarawak. The findings indicate that while a substantial portion of respondents acknowledge the importance of renewable energy, a significant number remain neutral or have reservations about its implementation. Cost is perceived as a major barrier, with the majority of respondents agreeing that renewable energy projects require substantial investment. Additionally, the study found that although some individuals have experience using renewable energy, widespread familiarity and confidence in its benefits remain limited. These insights underscore the need for targeted strategies to improve awareness, financial accessibility, and public

engagement in renewable energy initiatives. The reluctance to fully embrace renewable energy solutions may stem from a lack of information, misconceptions about costs, or concerns over reliability. Given that men in Batang Lupar are often primary decision-makers in households, their perspective significantly influences the adoption and acceptance of new technologies. If they hold reservations about renewable energy, it could slow the transition away from fossil fuels, further exacerbating energy shortages and environmental issues. To address these challenges, a multi-faceted approach involving policy interventions, education campaigns, and financial incentives is necessary. The Sarawak state government must play a pivotal role in addressing public concerns and facilitating the shift toward cleaner energy sources. By fostering a collaborative approach that involves both the government and the community, Batang Lupar can achieve a sustainable and resilient energy future.

To enhance the adoption of renewable energy in Batang Lupar, several key recommendations are proposed. Public awareness and education campaigns are crucial, as the study highlights a need for greater understanding of renewable energy benefits and feasibility. The government, in collaboration with local organizations, should implement educational programs to address misconceptions, highlight cost savings, and showcase successful case studies. These campaigns should target not only men as primary decision-makers but also the broader community to foster collective support. Encouraging community-based renewable energy projects can further drive adoption by building confidence and engagement among residents. Cooperatives or local energy-sharing programs, where multiple households or businesses invest in and benefit from shared renewable energy systems, can be an effective way to reduce costs while fostering a sense of ownership within the community. Additionally, strong policy implementation and government commitment are essential for a successful transition. The Sarawak state government should establish clear regulations and long-term renewable energy targets while promoting collaborations with international organizations, research institutions, and private sector investors. Such partnerships can bring valuable expertise and financial support, accelerating the development of local renewable energy projects.

By implementing these recommendations, Batang Lupar can move towards a more sustainable and energy-secure future. Through collaborative efforts involving the government, private sector, and local communities, renewable energy adoption can be accelerated, addressing both environmental concerns and energy shortages in the region

Acknowledgments

This research was supported by the Ministry of Higher Education (MoHE) Malaysia through the Fundamental Research Grant Scheme project (FRGS/1/2022/TK10/UTAR/03/1). The authors would like to thank the Institute of Postgraduate Studies & Research (IPSR) Universiti Tunku Abdul Rahman and UNESCO for the fund contributions, and the Centre of Disaster, Risk and Reduction (CDRR), and the Belt and Road Strategic Research Centre (BRSRC) for the support to this study.

Disclosure statement

No potential conflict of interest was reported by the authors.

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MALE PERSPECTIVE ON THE USE OF **RENEWABLE ENERGY:**

A CASE STUDY ON BATANG LUPAR. SARAWAK

Presenter:

Ir. Ts. Dr. Tan Ooi Kuan

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Broadenina Horizons Transformina Lives 德智体 並修 群美新并重

- Global warming driven by fossil fuels.
- Malaysia's fossil reserves projected to be depleted (IEA).
- Renewable energy: solar, wind, hydro (Shinn, 2019).
- RE benefits: sustainable, low-emission, long-term.
- Male perception critical to community adoption.



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Introduction

- Malaysia targets 20% RE by 2025 (Choong, 2019).
- Current reliance: 5.8% RE in 2017 (Abotah & Daimn, 2017).
- Public involvement increases adoption (UN, 2023).
- Local leadership, especially male decision-makers, influence RE success.

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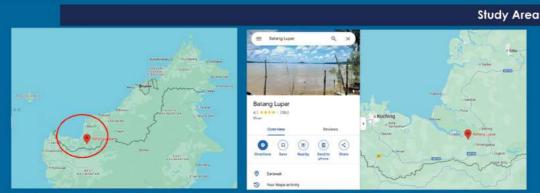
Problem Statement

- Low public awareness and limited RE adoption.
- Cost and lifestyle changes viewed as major barriers.
- Male stakeholders influence household energy decisions.
- Infrastructure gaps and energy shortages in Batang Lupar.



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- Batang Lupar: Sarawak region, 43,072 population.
- Major river system with environmental threats.
- Deforestation contributes to emissions (WWF, 2021).



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Study Area

- Limited electricity infrastructure (Sarawak Energy, 2020).
- Community perception affects RE project success.
- Understanding public view is key to adoption (Asmara et al., 2022).

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- Quantitative study: 50 male respondents.
- Location: Batang Lupar Estuary.
- Tool: Questionnaire with Likert scale (1-5).



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Methodology

- Analysis: Descriptive statistics using SPSS.
- Questions measured importance, cost, experience, lifestyle concern, and knowledge.



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P1 - Perception on the important of RE implementation SA 0 23 N D 4 SD 2 0 5 10 15 20 25 Perception on the important of renewable enery implementation at Batang Lupar Estuary. 46% Agree; 36% Neutral; 8% Disagree. UNIVERSITI TUNKU ABDUL RAHMAN DU012(A) 拉及大學(後太) Wholly owned by UTAR Education Foundation Co. No. 578227-M Broadening Horizons Transforming Lives 後智体兼修 學美術并世

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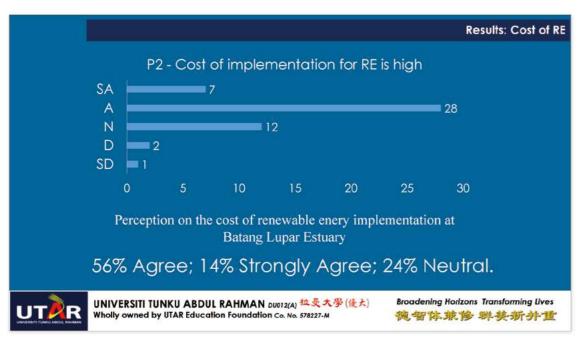
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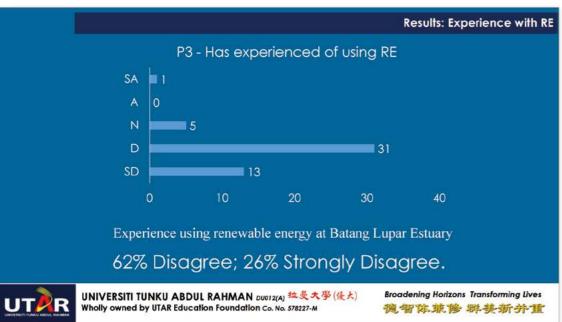
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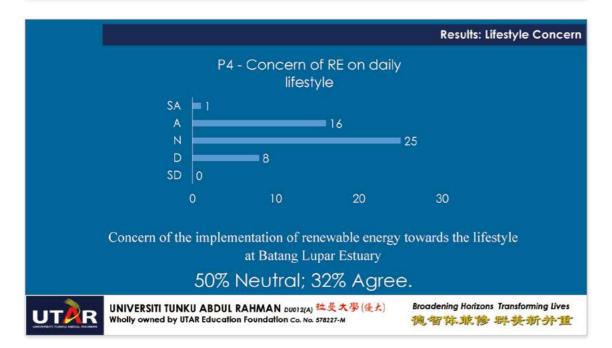
Results: Perception of Importance

UTAR

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Comparative Study of Disaster Memory Transmission between Japan and the Philippines: Cases of Kobe City and Tacloban City

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1. Introduction

The Philippines is a country frequently affected by typhoons, but Super Typhoon Haiyan (locally known as Yolanda) in 2013 caused unprecedented devastation, claiming 6,300 lives and leaving 1,062 missing, with most damage concentrated in Eastern Visayas, particularly Tacloban City. A key factor behind the widespread destruction was the insufficient public understanding of the term "storm surge," despite evacuation warnings being issued. Although the region had experienced storm surges in the past, those lessons had not been adequately passed down. Due to rising disaster risks from climate change, passing on the lessons of Super Typhoon Haiyan has become increasingly important. Disaster memory transmission aims to preserve experiences and share knowledge for future disaster risk reduction.

Japan offers a notable example in Kobe City, where the experiences of the 1995 Great Hanshin- Awaji Earthquake have been transmitted through multiple methods. These include distributing supplementary disaster education materials to all schools, establishing the Disaster Reduction and Human Renovation Institution, holding community events, and younger generations have also engaged in storytelling activities, promoting intergenerational transmission.

Thus, disaster memory transmission in Kobe has been implemented in a multilayered and institutionalized manner, with strong leadership by local authorities, ensuring that memories transcend individual experiences and become "collective memory" within a society. However, transmission practices are influenced by cultural and institutional contexts and may vary across regions. Therefore, this study aims to examine how disaster memories rooted in local culture are currently being transmitted in Tacloban City, using Kobe as a reference point.

2. Methodology

Field research was conducted in Tacloban City, Philippines, from March 11 to 17, 2025. The study included site visits and interviews with key institutions to understand disaster memory practices after Super Typhoon Haiyan.

Two workshops were also held: one with Eastern Visayas State University (EVSU) students and another with Barangay officers. Participants discussed current disaster memory practices, perceptions, and ideas for effective transmission, following examples from Kobe City.

3. Results & Discussion

Through results from surveys and interviews, this study compared disaster memory transmission practices in Tacloban City and Kobe City. Focusing on the role of institutional development and cultural background, the analysis identified four key characteristics of disaster memory transmission in Tacloban City.

First, there is a fragility in the physical foundations for memory preservation. While Kobe City has systematically institutionalized disaster memory through museums and public facilities, Tacloban City has only a single prominent physical memorial related to Super Typhoon Haiyan which was preserved through citizen donation rather than formal government efforts. Access to the site remains limited, and the facility does not adequately function as a collective memory platform for the broader community. Moreover, survey responses from EVSU students indicated low recognition of museums as an effective means of disaster memory transmission, suggesting that public interest in museum- based memory initiatives is limited.

Second, disaster memory transmission through school education in Tacloban largely remains informal. While Kobe City has incorporated earthquake experiences systematically into school disaster education programs, Tacloban City has no formal educational curriculum dedicated to Super Typhoon Haiyan. Although schools are closed on the official day of remembrance, the transmission of disaster memory relies mainly on individual teachers' personal accounts. In the survey, 20 out of 23 EVSU students reported learning about Haiyan through conversations with teachers, indicating that disaster memories are transmitted in an informal, teacher-dependent manner rather than through a structured educational framework.

Third, cultural differences in commemoration and memory sharing were observed. Kobe emphasizes civic memorial events led by local government, fostering a public and secular approach to collective memory. In contrast, over 90% of Tacloban's population is Catholic, and disaster remembrance predominantly takes place through spontaneous, church-led religious ceremonies. While religious practices play a significant role in memory transmission, they differ in structure and purpose from the public-centered memorial activities seen in Kobe.

Fourth, workshops suggested that an "oral telling" approach—directly sharing personal disaster experiences—may have strong cultural resonance in Tacloban. Focus group interviews indicated that storytelling is a familiar practice within Filipino culture. Although some participants expressed reluctance to recount deeply personal stories, many were willing to share generalized versions of their experiences. This finding implies that developing culturally adapted oral storytelling methods, rather than simply transplanting Kobe's structured approaches, could form an effective model for disaster memory transmission in Tacloban.

Overall, disaster memory transmission in Tacloban stands in contrast to Kobe's multilayered, government-led model. Institutional foundations in Tacloban remain underdeveloped, and individual or religious community initiatives largely drive activities. Finally, it must be noted that this study is based on a single fieldwork investigation and reflects the situation at a specific point in time. Future research should involve continuous fieldwork and longitudinal studies to capture the evolving process by which individual memories transform into socially shared collective memories.

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Inspiration for Female Seafarers from the Offshore Wind Industry

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Abstract

The offshore wind power industry in Taiwan has rapidly emerged not only as a new domain of maritime employment but also as a vital platform for advancing gender inclusion at sea. This study explores the professional experiences of Taiwanese female maritime practitioners, focusing on the occupational challenges they face and the shifting gender dynamics within the industry. Drawing on in-depth interviews with multiple participants, the research investigates how the offshore wind sector is transforming their career trajectories. This report delves into the unique opportunities and sources of inspiration the offshore wind industry offers to female seafarers. It highlights how offshore wind farms are opening up new technical and leadership roles, enabling women to expand their presence and impact in traditionally male-dominated maritime fields. At the same time, it addresses the structural and cultural barriers they continue to navigate—challenges that, paradoxically, can become catalysts for empowerment and professional growth. By capturing these evolving narratives, the report sheds light on how the offshore wind sector can serve as a springboard for women seeking meaningful careers in sustainable and inclusive industries. It emphasizes the potential for female seafarers to not only enter but thrive in this emerging field, contributing to a greener future shaped by diversity and resilience.

Introduction

Promoting gender equality in the industry is one of the United Nations Sustainable Development Goals (SDGs), and the topic of gender equality in the maritime sector has long been a popular issue—often as a direct acknowledgment of existing gender disparities. Traditionally, female seafarers in Taiwan—and globally—have encountered systemic challenges such as gender discrimination, social isolation, and restricted career advancement within the commercial shipping industry (Carballo Piñeiro & Kitada, 2020; Commission et al., 2020; Guo & Liang, 2012; Guo, 2019; Hansen & Jensen, 1998; Jewan, 2023; Justesen & Javornik, 2023; Kate Pike & Zhang, 2021; Laura Carballo Pineiro, 2020; Lim, 2023; Magramo, 2012; Mathew, 2015; Narayanan et al., 2023; Ozabor et al., 2023; Pike, 2016; Pike et al., 2021; Tang, 2023; Tseng & Pilcher, 2024; Zhao et al., 2017). However, as Taiwan's offshore wind energy sector expands, new types of vessels and work environments offer alternative opportunities. This paper explores how these new working contexts provide "inspiration"—in the form of employment, recognition, safety culture, and gender experience—for female seafarers.

According to a study conducted jointly by the Women in Business Network of the British Chamber of Commerce Taipei and the UK Renewables Committee, Taiwan ranks first in the world for female representation in the offshore wind industry. The research found that 95% of offshore wind companies in Taiwan have female department or project managers, and 60% have female board members—many of whom serve in top executive roles and wield significant influence within their companies and the broader industry (Taipei, 2021). Although the study did not specifically include female seafarers, its findings suggest that women in the offshore wind sector are neither a minority nor a marginalized group.

This encouraging industry landscape prompted the authors to explore whether the offshore wind sector could serve as a "haven" for female seafarers. Could their maritime expertise not only find relevance but also thrive and advance within this emerging industry?

This study explores the following research questions:

- 1. What are the career development patterns and key considerations for female seafarers?
- 2. How does the offshore wind service sector serve as a source of career inspiration for female seafarers?
- 3. Through what pathways can the offshore wind industry empower female seafarers?

Research Methodology

This study adopts a qualitative approach based on semi-structured interviews conducted between 2024 and 2025. Grounded theory was employed as the primary method of data analysis, enabling the gradual development of insights to address the research objectives (Charmaz, 2014). The participants include seven female seafarers who previously worked in commercial shipping and later transitioned to the offshore wind industry. They possess diverse levels of experience and have served on various vessel types, including bulk carriers, container ships, oil tankers, and offshore wind support vessels. Through the coding and analysis of interview transcripts, core themes related to career development were systematically identified.

ID	Age	Work Experience
F W 01	43	Bulk carrier, container ship, offshore wind barge
FW02	28	Oil tanker, maritime engineering vessel (AHTS)
FW03	34	Container ship, research vessel, offshore wind Service Operation Vessel (SOV)
F W04	35	Bulk carrier, LNG carrier, offshore wind Crew Transfer Vessel (CTV)
FW05	36	Bulk carrier, offshore wind Ocean Construction Vessel
FW06	37	Passenger ship, container ship, offshore wind Crew Transfer Vessel (CTV)
FW07	34	Bulk carrier, offshore wind Service Operation Vessel (SOV)

Note:

- · AHTS (Anchor Handling Tug Supply Vessel): A specialized vessel for anchor handling and towing, commonly used in offshore energy sectors.
- · SOV (Service Operation Vessel): A vessel designed for long-term operation and maintenance of offshore wind farms, with accommodation facilities and dynamic positioning systems.
- · CTV (Crew Transfer Vessel): A smaller, fast vessel for daily transfer of technicians between shore and wind turbines.
- · Ocean Construction Vessel: A large vessel used for offshore foundation construction and subsea cable installation.

Career Development Patterns and Key Considerations for Female Seafarers

The interviewees in this study reflected on their motivations for choosing to study maritime disciplines. Some were influenced by family members working in the shipping industry, while others enrolled simply because they were admitted to a national university. However, the most decisive factor was the attractiveness of the salary. Upon

Upon entering the job market after graduation, they quickly experienced the reality that female seafarers had fewer opportunities than their male counterparts. Even when they were fortunate enough to secure employment, they had to tread carefully in dealing with colleagues. In the event of sexual harassment, they had to carefully weigh how to respond—balancing the defense of their dignity with the need to preserve their job opportunities.

Female seafarers were often the only women aboard a vessel. As a clear minority, many experienced a profound sense of isolation, especially within the highly enclosed environment of oceangoing merchant ships. Over time, as they accumulated sea-time and savings—their "first pot of gold"—they began to encounter gender bias within company promotion systems. Simultaneously, a growing emphasis on family values led them to consider transitioning to shore-based work or exploring opportunities in the offshore wind industry.

Based on the interview data, the employment conditions in both traditional commercial shipping and the offshore wind sector represent key push and pull factors influencing career transitions. Female seafarers' career development is shaped by three interrelated factors: salary, promotion opportunities, and family values. The importance of each factor shifts with age and career stage. When entering the labor market, women are driven by the appeal of high wages and broadening their horizons. As they become more senior, family considerations increasingly take precedence.

This study argues that, regardless of gender, salary, career advancement, and family values are essential factors in seafarers' career planning. However, for female seafarers in particular, promotion opportunities and family values are often in a trade-off relationship, where the pursuit of one may come at the expense of the other. Although Taiwan's maritime industry does not formally discriminate against women, in practice, gender-friendly policies remain insufficient. Persistent issues include: A limited and unstable quota for female seafarers; Lack of a clear career promotion framework; Inadequate mechanisms for addressing sexual harassment; Insufficient institutional support for transitioning to shore-based positions.

Push Factors: Limitations in Commercial Shipping

- · Sexual Harassment and Power Imbalance: Instances of verbal and physical harassment—often perpetrated by senior officers—were described by participants (e.g., FW03, FW05, FW07).
- · Career Barriers: Female cadets or officers were denied full employment or not invited back for further contracts due to their gender (FW06).
- Psychological and Emotional Stress: Feelings of isolation and the absence of support systems were common experiences across participants (FW01–FW07).

Pull Factors: Offshore Wind as a Game-Changer

· More Stable Working Conditions: Offshore wind vessels are typically day-operation ships, offering regular working hours and improved living conditions (FW06)

- · Technical and Professional Transition: Many female seafarers transitioned into the offshore wind sector due to its diverse technical demands, such as dynamic positioning and HSE (Health, Safety, and Environment) systems (FW03).
- · Gender-Neutral Workplace Culture: Compared to container or bulk carriers, offshore wind projects emphasize teamwork and are often led by foreign shipowners whose professional culture reduces the salience of gender issues.
- · Career Development and Respect: Offshore wind has provided many women with a "second spring" in their careers, where they are respected and valued—demonstrating that success is possible even for those without traditional maritime backgrounds (e.g., FW05).

Participant Reflections:

FW05 shared: "It was mainly because of the high salary—I thought it was much more attractive compared to land-based jobs, so I decided to give it a try." FW04 pointed out that due to systemic barriers and company biases, many women had to go through complex selection and interview processes just to obtain an internship opportunity. FW07 noted: "The company would remind you in advance to keep a distance," and "The person who harassed me was the captain. I chose not to report it because I was afraid the company would see female crew as troublesome." FW02 and FW06 revealed that after incidents of sexual harassment, some shipping companies opted to stop recruiting female seafarers altogether. Even those that allowed women on board did not necessarily provide equal promotion opportunities. For example, FW02 mentioned: "The reason there's a higher percentage of women on the XX oil tanker is because the salary is so low that men don't apply." FW03, who had attained the position of second officer on a container ship, eventually switched careers due to the difficulty of balancing long-distance voyages with family life. She said, "Right after graduation, I was willing to endure long voyages to earn my first pot of gold, but over time, my values changed—I wanted to be there for my family."

Career Inspiration from the Offshore Wind Service Sector for Female Seafarers

The emergence of offshore wind power represents more than just the creation of new jobs—it signals the beginning of a cultural transformation that challenges traditional gender norms in the maritime industry. Drawing on interview data, this study analyzes the career experiences of female seafarers and categorizes them into four key dimensions: career transition, gender experience, recognition, and safety culture. The findings reveal that the offshore wind industry offers a more diverse and relatively inclusive employment platform. While gender bias and structural barriers persist, female seafarers are finding new opportunities for self-worth and professional identity within this evolving sector.

The figure below presents the results of matrix coding conducted using the qualitative

- · Technical and Professional Transition: Many female seafarers transitioned into the offshore wind sector due to its diverse technical demands, such as dynamic positioning and HSE (Health, Safety, and Environment) systems (FW03).
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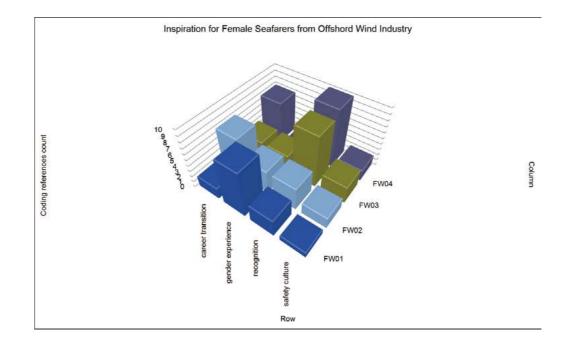
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The figure below presents the results of matrix coding conducted using the qualitative

analysis software NVivo 11, based on the responses of interviewees (FW01–FW04) and the node codes (career transition, gender experience, recognition, and safety culture). A detailed explanation is provided as follows.



Career Transition: From "Exclusion" to "Opportunity Windows"
 The offshore wind industry has emerged as a new source of inspiration for female seafarers, creating pathways for them to expand their roles beyond traditional maritime positions and enter more inclusive, skill-driven sectors.

I remember a captain once said after retiring that he wasn't very close to his children, and it made him quite sad. Seafarers spend so much time at sea with so many uncertainties—you can't really be your full self. At the beginning, I thought maybe reaching the position of chief mate would be enough. I think I was also influenced by my peers—most of my close classmates and friends were already married and had children. In offshore wind, most of the jobs involve working intensively for two weeks and then having two weeks off. That kind of schedule allows me to develop a family life. — (FW04)

When you're on a ship, you're doing long-haul voyages—you can't work on land. It's not that it's unbearable, but after a while, you start to feel, how should I put it... you just want to have more time to spend with your family. Of course, once you've saved up enough—capital, salary, income—you start thinking that maybe you can afford to come back to land and cover your living expenses. — (FW03)

If you've been sailing for a long time, you go too long without interacting with regular people. Basically, if you want to stay in this industry as a seafarer, it's rare to see someone continue after having children. From what I've heard, most women who have kids tend to switch to shore-based roles—because it's really hard for mothers to be away from their children. But offshore wind doesn't have that problem. ---In traditional major shipping companies, you're expected to show

- complete loyalty. But in offshore wind, most of the companies aren't Taiwanese—you usually get hired through headhunting agencies. So loyalty isn't really an issue. If there's a good opportunity and you're qualified, you just go for it, and everyone welcomes you. That's how it works for everyone, including the foreign crew. They're not tied to one company either—they just go wherever the opportunity is. (FW02)
 - You don't feel as disconnected from society. Sure, most ships now offer Wi-Fi—satellite communication and all that—but actually going home is a different matter. Offshore wind, on the other hand, gives you the chance to balance work and family. I think both men and women need that kind of balance. ---- My experience on container ships was extremely painful—the bureaucratic culture, the discrimination, even being scapegoated. I couldn't handle the pressure; I broke down. I just couldn't keep working for that shipping company anymore. At that point, I thought, "Alright, I'll give offshore wind a try." (FW01)
- Gender Experience: From Endurance to Agency The traditional maritime industry is deeply masculine in nature. Although workplace sexual harassment is not unique to shipping, the isolated and enclosed environment onboard ships intensifies the experience for women. For many female seafarers, gender discrimination and harassment are almost universal aspects of their careers. In contrast, women working on offshore wind vessels report a significant improvement in this regard. Compared to traditional commercial ships, offshore wind presents a less hostile and more equitable work environment.

In most cases where the company handles sexual harassment incidents, it's usually the woman who gets reassigned. — (FW04)

There's no way around it—in such a closed environment, whether it's on a ship or in the military, these things are bound to happen. They're basically unavoidable. But in offshore wind, it's really not like that. It happens far less—truly much less—compared to commercial shipping. — (FW03)

Traditional commercial shipping companies would simply prohibit women from boarding—just cut the issue off entirely. Offshore wind vessels, on the other hand, don't exclude female seafarers. But since most of the crew are foreigners, and in Taiwan they essentially take on the role of international crew, you still need to be cautious. Some countries are more open about gender, so certain things can still happen—you have to stay alert. — (FW02)

On a bulk carrier, I once encountered a captain who would deliberately tell dirty jokes just to see how I'd react. Honestly, the captain is usually the most likely person to harass you. At first, I tried to hint that he had crossed a line and asked him to stop. But when he kept pushing it, there was one time he went way too far. I told him directly: if he made me feel uncomfortable again, I would trigger the fire or lifeboat alarm to alert the entire ship. Since switching to offshore wind vessels, I have never experienced sexual harassment. — (FW01)

Recognition: Reconstructing Professional Identity
The traditional commercial shipping industry operates within a rigid hierarchical structure, where each role—chief officer, second officer, third officer, deckhand—has fixed responsibilities and repetitive daily routines. In contrast, offshore wind vessel crews face a wide range of dynamic situations that demand adaptability and continuous on-the-job learning. This diversity of tasks significantly broadens their career development potential. Success in this setting requires more than technical expertise in vessel operations. It also demands leadership skills, effective coordination with clients and technicians, and strong communication abilities—all areas where many interviewees reported a deep sense of professional fulfillment. Inspired by the supportive and team-oriented culture of offshore wind companies, many female seafarers are now reimagining their long-term careers with renewed motivation, confidence, and a stronger sense of professional identity.

When I started working on the CTV (Crew Transfer Vessel), you had to do everything—take on multiple roles. I remember thinking, "Wow, the way this ship operates is completely different from commercial vessels." There's no strict hierarchy; it feels much more equal—everyone is basically on the same level, and I really liked that atmosphere. ---Our workflow is extremely fast-paced and compressed. The 12-hour shifts are packed—it's exhausting and intense. Besides being the captain, you're basically also acting as the chief, second, and third officer. So your experience builds up very quickly. ---It's not just about operating the ship—you also need to know how to communicate with people. Compared to traditional commercial vessels, communication skills are much more important here. I think women tend to have great work attitudes and strong learning abilities. We don't just follow orders blindly—we think about how to do things more efficiently. I really think women are amazing. — (FW04)

I've noticed that once people start working on offshore wind vessels, very few return to commercial shipping. The living environment is different, and so are the leave arrangements. For example, on some vessels, you work two months and get one month off—that's a huge difference compared to commercial ships, where you might be away for nine or ten months at a time. ---From my own experience, I feel like it really helps you build technical skills. You get the chance to work with things like dynamic positioning systems and learn how offshore wind operations function. We're not limited to working for Taiwanese companies either—we can work for foreign ones too. Honestly, most of us don't plan to stay in Taiwan forever, and we don't necessarily have to remain in seafaring roles. ---Take the technicians on our vessel, for example. Many of them started out as seafarers and then transitioned into these jobs because of their ship knowledge. It shows that this is also a pathway for career change—there are just so many directions you can go. — (FW03)

In commercial shipping companies, they still generally prefer men—regardless of actual ability. You'll notice that for a woman to become chief mate, she has to work extremely hard, be very diligent, and know a lot just to even be considered. She still has to go through interviews and evaluations. But for men, as long as they meet the basic requirements, they can usually become chief mate without much issue. That's just an undeniable reality. ---In the offshore wind industry,

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people care about your ability, not your gender. In fact, being a woman might even be an advantage in some roles—especially when it comes to communication, where patience and a positive attitude can make a difference. ---On our vessel, we have client representatives on board—they're like the owners' delegates, and in some cases, they feel like our direct bosses. We're responsible for communicating with them constantly. Our captain kind of designated me for that role—he specifically wanted a female chief mate who could communicate effectively with foreign clients. — (FW02)

Most of the wind farm operators are foreign companies, and I've learned a lot on offshore wind vessels just by working with the supervisors from those operators. They usually assign a representative—what we call the client rep—to be onboard. Since I was new to offshore wind, kind of a rookie, there were a lot of things I didn't fully understand. They weren't going to give me full-on training from start to finish, so I just had to rely on what I needed to know for my current duties. It was like the saying "the blind leading the blind"—I didn't have the full picture. --- But honestly, when the client reps had time, they were really willing to explain things to me, to answer my questions, or to help me understand things I didn't quite get. Once you understand both the beginning and end of a process, you start to grasp why certain delays happen, where the bottlenecks are, and what the client's concerns might be. And that's when I found myself thinking, "Wow, this is actually really fun." For me, that's exactly the kind of challenge I want in a job. — (FW01)

Safety Culture: Structural Advantages of Offshore Wind and Short-Duration Voyages The nature of offshore wind work does not require seafarers to spend months at sea. Some crew transfer vessels even return to port daily. The work itself is highly specialized and complex, demanding strong teamwork and a heightened focus on safety. A key differentiator lies in the shift in workplace culture. The offshore wind industry places strong emphasis on Health, Safety, and Environment (HSE) standards and collaboration. It fosters a professional environment that does not tolerate harassment and prioritizes both training and safety. This cultural transformation creates a safer, more respectful, and inclusive space for all crew members.

Some contracts have you returning to port once a week, and others have you coming back every day. When you return daily, it really feels more like a regular job. Being able to come back to land regularly just makes you feel different mentally. — (FW04)

The offshore wind industry was introduced from abroad, so the systems they use—especially for seafarers—are quite different from the old ways of thinking in traditional commercial shipping. Things like leave policies, benefits, and salaries tend to follow international standards, and they're generally pretty decent. There's also a genuine concern for the crew's physical and mental well-being, and the living conditions are relatively good.

For example, on offshore wind vessels, you might work for two months and then get one month off.

Compared to commercial ships where you might have to stay onboard for nine or ten months

• without going home, it's a huge difference. — (FW03)

There are just too many cases on traditional commercial ships where the captain gets drunk and calls the second or third officer to his cabin to drink with him. If the captain asks you to go, would you dare refuse? Offshore wind, on the other hand, is strictly zero alcohol—it's absolutely prohibited and strictly enforced. — (FW02)

Offshore wind makes you feel much more connected to society. All the vessels are equipped with Wi-Fi and satellite communication, so there's constant interaction between the ship and shore. Plus, the industry enforces extremely strict operational protocols and safety inspections. — (FW01)

Offshore wind farms provide a new employment platform that values diversity and teamwork. This environment allows women to rethink their roles and pursue long-term careers beyond traditional deck or engine jobs. Many female seafarers find inspiration in the industry's emphasis on safety, training, and inclusivity. Female pioneers in offshore wind serve as role models, motivating others to enter and thrive in this sector. These pioneering women serve as an inspiration to others, demonstrating that gender should not be a barrier to advancement in offshore careers.

Findings and Discussion: The Empowerment Potential of the Offshore Wind Industry for Female Seafarers

1. The Potential for Gender Equality:

Many women in the traditional maritime industry face challenges rooted in gender stereotypes. Early experiences on commercial vessels often lacked gender-friendly policies, and workplace sexual harassment was not uncommon. Due to concerns about their career advancement or the company's reputation, many women chose to remain silent or handle such incidents privately. This contributed to significant work-related and psychological stress.

In contrast, the short-term shifts and regular returns to land typical of offshore wind operations help reduce the impact of gender on interpersonal dynamics and task assignments. Several interviewees noted that after entering the offshore wind industry, they found the work environment to be significantly more open, inclusive, and respectful compared to traditional shipping.

2. The Potential for Career Advancement:

Traditional seafaring has long emphasized physical labor and rigid hierarchies—factors that often-discouraged female participation. In contrast, the offshore wind industry requires more advanced skills in areas such as data analysis (for turbine performance and environmental impact), and safety management using technologies like drones, sensors, and AI monitoring.

The introduction of new systems, such as Dynamic Positioning (DP), has created opportunities for women to overcome gender-based barriers. Interviewees emphasized

that on offshore wind vessels, professional knowledge and technical expertise have replaced traditional strength-based evaluation criteria. As a result, women are able to gain recognition and promotion based on their capabilities. For many female seafarers facing career stagnation, offshore wind has provided a powerful opportunity to revive and reshape their career trajectories.

3. Recommended Actions:

- Expand Female Talent Development Programs in Offshore Wind: Promote training programs specifically designed for women to build skills and knowledge relevant to the offshore wind sector.
- · Foster Gender-Equitable Workplace Culture: Integrate gender mainstreaming into HSE (Health, Safety, and Environment) policies, and establish robust systems for the prevention and handling of sexual harassment.
- · Institutional Incentives to Encourage Female Participation: Use policy tools such as tax incentives, recruitment bonuses, and career coaching to guide women toward offshore wind-related positions.
- · Media Campaigns: Highlight and celebrate the success stories of female seafarers in offshore wind to challenge stereotypes and inspire broader participation.

Conclusion

This study highlights how the offshore wind industry in Taiwan offers a promising and transformative platform for female seafarers seeking professional growth beyond the constraints of traditional maritime careers. While the commercial shipping sector remains shaped by hierarchical structures, gender bias, and limited support systems, the offshore wind sector presents a more inclusive alternative—emphasizing technical competence, safety, teamwork, and work-life balance.

Through in-depth interviews, we find that offshore wind not only provides female seafarers with greater career stability and recognition but also allows them to redefine their professional identity and aspirations. The industry's short-term shift patterns, skill-based evaluations, and international workplace culture create meaningful opportunities for empowerment and advancement.

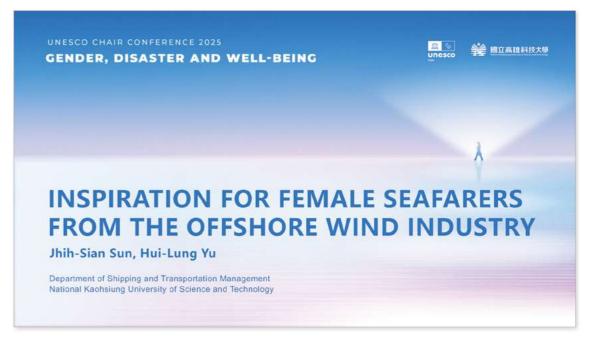
However, structural reforms and proactive measures are still needed to ensure sustained gender equity. By expanding training programs, strengthening anti-harassment policies, offering institutional incentives, and promoting positive female role models, stakeholders can further open the offshore wind sector to women—and, in doing so, help shape a maritime future that is both sustainable and inclusive.

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01 Introduction: A New Frontier for Women at Sea

The research questions:

- What are the career development patterns and key considerations for female seafarers?
- How does the offshore wind service sector serve as a source of career inspiration for female seafarers?
- 3. Through what pathways can the offshore wind industry empower female seafarers?

Qualitative Research

This study is based on in-depth interviews and analyzes the data using the grounded theory. Basic Information of the seven Interviewees details are shown in the table

ID	Age	Work Experience
FW01	43	Bulk carrier, container ship, offshore wind barge
FW02 FW03 FW04 FW05 FW06	28 34	Oil tanker, maritime engineering vessel (AHTS) Container ship, research vessel, offshore wind Service Operation Vessel (SOV)
	36	Bulk carrier, offshore wind Ocean Construction Vessel
	37	Passenger ship, container ship, offshore wind Crew Transfer Vessel (CTV)
		34



Career Development and Considerations for Female Seafarers







Career Inspiration from the Offshore Wind for Female Seafarers

03 Career Inspiration from the Offshore Wind for Female Seafarers

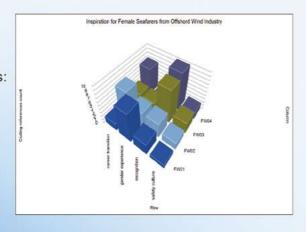
Matrix Coding Results

Analyzed across four key themes:

- Career transition
- Gender experience
- Recognition

(NVivo 11)

Safety culture



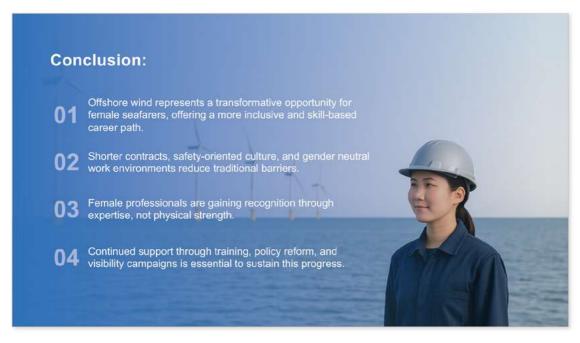
03 Career Inspiration from the Offshore Wind for Female Seafarers From Exclusion to Opportunity Windows Structural Advantages of Offshore Inspires female seafarers to move beyond traditional roles · Offers inclusive, skill-driven career pathways Wind and Short-Duration Voyages Shorter rotations Work is specialized and safety-focused Strong emphasis on HSE standards · Promotes a zero-tolerance stance on SAFETY GENDER EXPERIENCE Reconstructing Professional Identity From Endurance to Agency Traditional shipping is male-dominated and highly isolating Gender bias is a common experience for female seafarers learning Technical skills, Leadership & · Offshore wind offers a more equitable and less hostile coordination, Communication with clients &







Expand Female Training Programs Launch offshore wind training courses Promote Gender-Equitable Culture Integrate gender into HSE policies; enforce anti-harassment measures. Run Media Campaigns Showcase female role models to break stereotypes and boost visibility





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VISIT LOCATIONS

國立科學工藝博物館 - 莫拉克風災紀念廳
National Science and Technology Museum Stories of Recovery and Reconstruction after Morakot

禮納里部落 - 莫拉克風災後重建成果
Rinari Tribe Morakot Typhoon Recovery Achievements

山川琉璃吊橋 Shanchuan Glass Suspension Bridge



災屆滿十週年,由更新為【希望:未來 莫拉克風災紀念館】,強調風災後十年的前瞻與精進 ,系統性展現近年各界防救災的新觀念及成果,藉以提升國人災害風險意識,促進安全韌 性的防災文化。

In 2009, Typhoon Morakot devastated southern and eastern Taiwan, leaving many people homeless and bereaved. In the aftermath, various sectors joined hands to rebuild. The "Stories of Recovery and Reconstruction after Morakot" exhibition was then established in the museum to record the impact of the disaster, learn from its lessons, and hopefully inspire the wisdom and resilience for disaster prevention in the future. As you step into the exhibition hall, through the immersive theater, AR augmented surroundings, light-sculpting projection, and interactive body sensing, we will take you back to the scene of Typhoon Morakot, where you can experience the unwavering stories of rescue and reconstruction. The exhibition not only conveys inspiration and hope in the face of disaster but also guides visitors to contemplate how to work together to build resilient homes and prepare for future challenges. It is a moving experience combined with learning that invites you to explore and reflect.

禮納里部落 - 莫拉克風災後重建成果

Rinari Tribe - Morakot Typhoon Recovery Achievements

禮納里部落位於屏東瑪家鄉,四周山林環繞,視野遼闊,屏北平原盡收眼底,美不勝收。民 國98年莫拉克風災重創屏北三鄉,政府協助居民重建家園,選定瑪家農場作為永久屋基地, 因此將鄰近的三地門鄉大社村,瑪家鄉瑪家村及霧臺鄉好茶村三村的居民遷移來此,並由世 界展望會援建永久屋,命名為「禮納里」部落,意為「我們一起走,大家一起往那兒去的地 方」。

部落內信步而行,可以發現部落內教堂坐落四方,每座教堂外觀都有獨特造型,各自精采, 是當地一大特色,也象徵著居民的虔誠;伴隨旅人腳步而行的是隨處可見的原住民工藝品, 代表珍貴的百合花、意味起源的百步蛇圖騰。部落內的長榮百合國小,校舍風格非常活潑可 愛,走廊上設置很多特色裝置,如活動式的小迷宮,開放式的鋼琴空間,還有許多小巧思等 待遊客來此發掘。

Rinari Village can be found in Majia Township of Pingtung. The community is surrounded by forests and mountains and offers a great view of the picturesque Pingbei Plain.

The community's name implies the idea of people walking shoulder-to-shoulder in the same direction. It was selected as the relocation destination for indigenous tribes from Dashe Village of Sandimen Township, Majia Village of Majia Township, and Haocha Village of Wutai Township after the devastation caused by Typhoon Morakot in 2009. Thanks to the government and World Vision International, which worked together to offer permanent housing, the indigenous rebuilt their homeland in Rinari Village and started a new life together. Deinagkistrodon totems that symbolize the origin of the indigenous culture.



山川琉璃吊橋是連結屏東縣三地門鄉三地村與瑪家鄉北葉村,吊床式結構的吊橋,最大可容 納人數為100人。橋上設有以琉璃珠意象打造的藝術裝置,由排灣族藝術家撒古流·巴瓦瓦隆 設計,展現濃厚的原住民文化特色。橋體兩側鑲嵌了32面故事牌,分別述說32個原住民族部 落的故事。吊橋兩端並設有馬賽克藝術牆與巨石裝置,增添文化與視覺層次感。此外,橋體 兩側共加裝了1,664顆琉璃珠,營造出獨特而富有意義的美學景觀。

The Shanchuan Glass Suspension Bridge is a suspension bridge connecting Sandi Village in Sandimen Township and Beiye Village in Majia Township, Pingtung County, Taiwan. It is a hammock-style suspension bridge with a maximum capacity of 100 people. The glass bead-inspired design elements were created by Paiwan artist Sakuliu Pavavaljung. Along both sides of the bridge are 32 story plaques, each depicting the story of a different indigenous tribe. At both ends of the bridge, visitors will find mosaic artworks and large stone installations. A total of 1,664 glass beads are embedded along the sides of the bridge, enhancing its cultural and visual appeal.

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