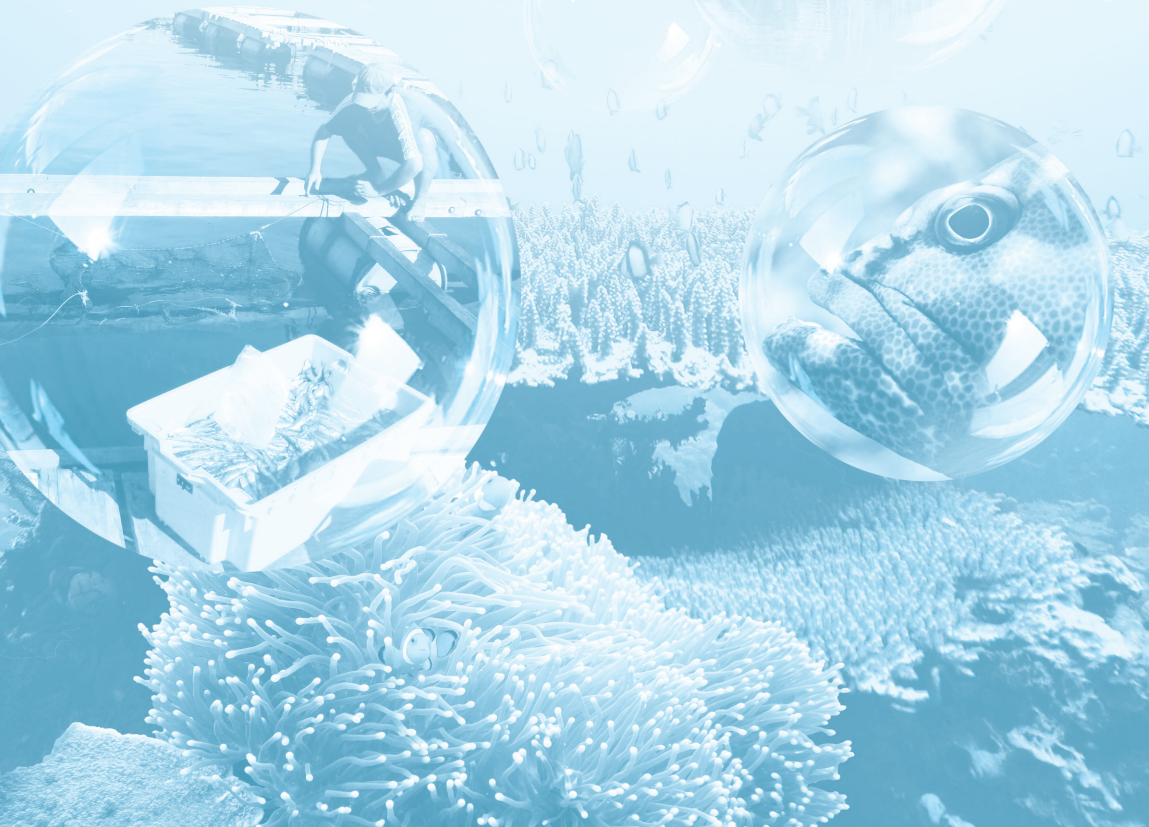


INAUGURAL LECTURE

# The Ecological Paradigm in Seafood Security



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**Saleem Mustafa**

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*Delivered as Universiti Malaysia Sabah Professorial Inaugural Lecture on  
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## Synopsis



The importance of seafood in global food security and economy cannot be overemphasized. Capture fisheries and aquaculture supply about 154 million tons of fish annually, with a total value of US\$217.5 billion. Aquaculture's contribution to this production and value is 90.4 million tons and US\$144.4 billion, respectively. Billions of people depend to varying degrees on seafood for dietary protein. Development of these two sectors has not happened without environmental problems and, therefore, adaptive management is required to ensure sustainability. A major conservation intervention and measures for mitigating the effects of climate change are needed for sustaining the ability of marine ecosystems to withstand the fishing pressure. Likewise, new approaches and technological adaptations will contribute greatly to sustainability of aquaculture. These are the issue which deserve serious attention since, in terms of human nutrition and economy, the role of seafood sector is growing rapidly. This book delves upon the three seafood production systems – capture fisheries, aquaculture and sea ranching, elaborates the pertinent issues and presents scientific reasons for integrating ecological perspectives in management to address some of the major problems constraining their growth. The significance of a paradigm shift by way of removing negatively interacting factors among these sectors with positive synergies with their inherent elements of sustainability is also discussed. Consistency of these approaches with the triple bottom line vision of development instead of exclusive focus on seafood production in isolation with environmental homeostasis is explicitly explained.



## Sinopsis



**K**epentingan makanan laut dalam ekonomi dan sekuriti makanan global tidak boleh terlalu diabaikan. Sektor perikanan yang meliputi tangkapan dan akuakultur membekalkan kira-kira 154 juta tan metrik ikan setiap tahun dengan nilai US\$217.5 bilion. Sumbangan dari industri akuakultur kepada pengeluaran tersebut adalah sebanyak 90.4 juta tan metrik bernilai US\$144.4 bilion. Berbilion manusia bergantung kepada pelbagai jenis makanan laut sebagai sumber diet protein. Bagaimanapun, pembangunan kedua-dua sektor tersebut tercabar dengan masalah alam sekitar. Justeru, pengurusan adaptif diperlukan untuk menjamin kelestariannya. Campur tangan dalam hal pemuliharaan serta langkah-langkah mengurangkan kesan perubahan iklim adalah diperlukan untuk mengekalkan keupayaan ekosistem marin menghalang tekanan eksploitasi penangkapan ikan. Begitu juga dengan adanya pendekatan baharu dan penyesuaian teknologi akan menyumbang kepada kelestarian akuakultur. Isu ini seharusnya mendapat perhatian serius kerana dari aspek ekonomi dan pemakanan manusia, peranan sektor makanan laut berkembang dengan amat pantas. Buku ini mengupas kajian tiga sistem pengeluaran makanan laut iaitu perikanan tangkapan, akuakultur dan perladangan laut; menghuraikan isu-isu berkaitan dan menyajikan alasan-alasan saintifik untuk menggabungkan sudut pandangan ekologi dalam pengurusan bagi menangani beberapa masalah utama yang mengekang pembangunan sektor tersebut. Kepentingan anjakan paradigma dengan cara menggantikan faktor-faktor negatif yang saling berinteraksi di antara sektor tersebut dengan sinergi positif yang mempunyai elemen kelestarian semula jadi juga dibincangkan. Turut diterangkan dengan terperinci ialah konsistensi pendekatan-pendekatan tersebut dengan konsep “triple bottom line” dalam visi pembangunan, berbanding dengan hanya fokus terhadap pengeluaran makanan laut tanpa mengaitkannya dengan homeostasis alam sekitar.