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Transfer Capacity Building through a South-South Triangular Cooperation between Cambodia, Indonesia and Australia:

Bridging technological gaps and supporting sustainable mariculture in Cambodia

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BRIN
BADAN RISET
DAN INOVASI NASIONAL




Australian Government
Australian Centre for
International Agricultural Research

 **USC**
AUSTRALIA



**Primary
Industries**

Project origin

Participating at THE ASEAN REGIONAL TECHNICAL CONSULTATION, organized by SEAFDEC-ASEAN Foundation, 9-11 Desember 2014, Nay Phi Taw, Myanmar



Country representatives:

Cambodia : Somony Thay
Indonesia : Asda Laining

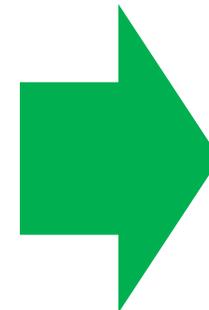


Theme of Regional Technical Consultation:
Development and Use of Alternative Dietary
Ingredients or Fishmeal Substitute in
Aquaculture feed Formulation



ACIAR FIS/97/73 1999-2003
Grouper aquaculture project :Inventory of
selected local feed ingredients locally
available in South Sulawesi and their use for
marine finfish

Sharing experience about Aciar Research
collaboration with Indonesia (RICA) to the
participants (ASEAN, FAO, Japan)



**Model of research
collaboration in ASEAN
members**

Triangular communication (Somony, Asda, Pak Mike) and 2016 ACIAR unexpectedly approved South-South Triangular collaboration



Somony (Cambodia)



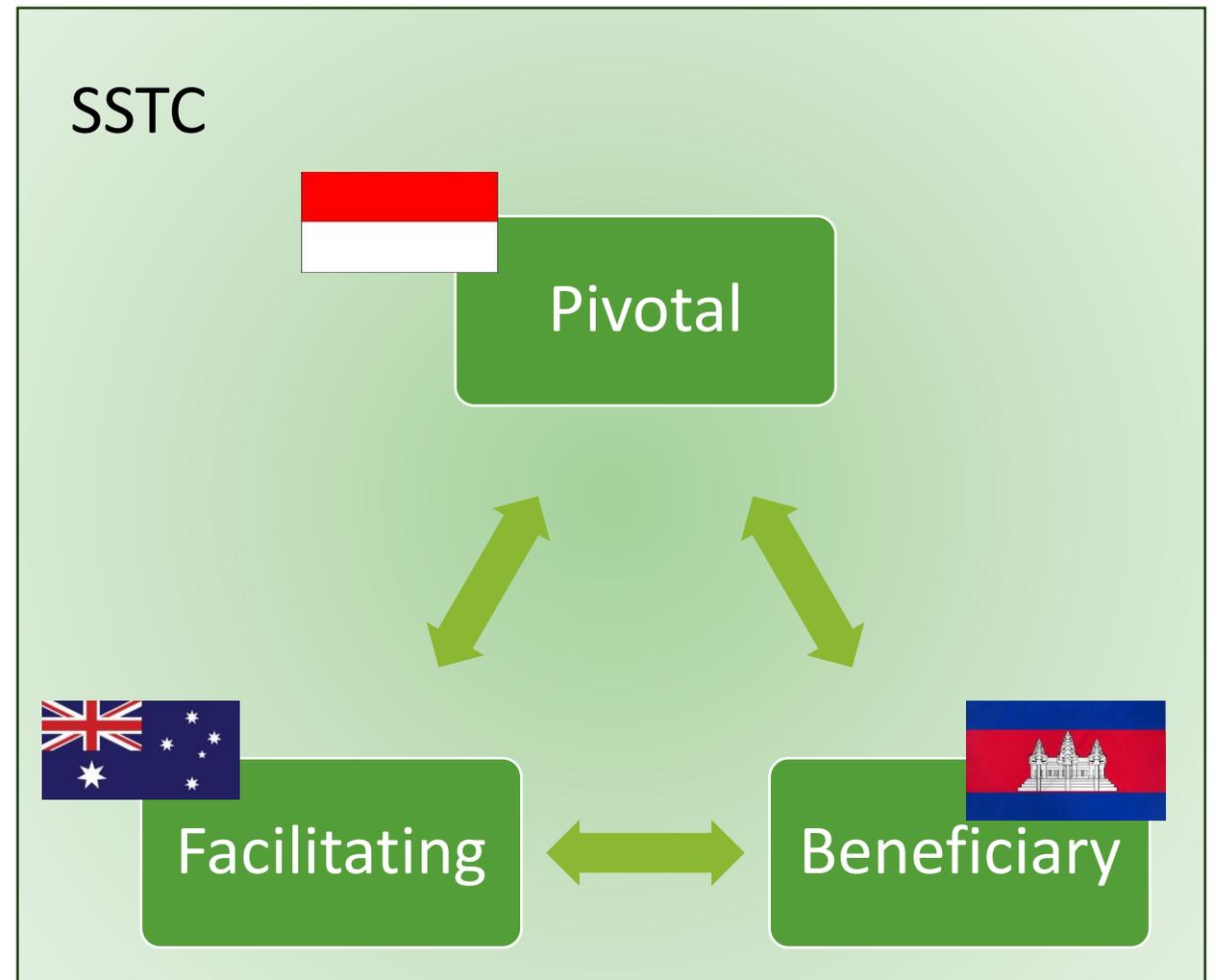
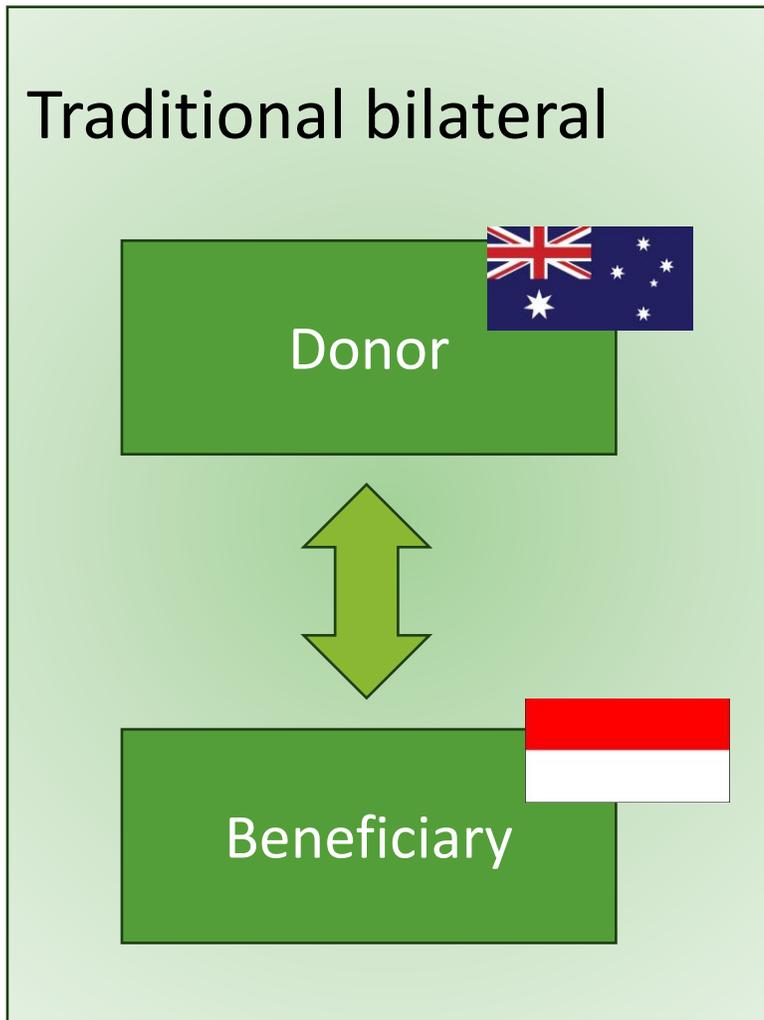
Asda (Indonesia)

- ACIAR Project FIS/2016/130: *Accelerating the development of finfish mariculture in Cambodia through south-south research cooperation with Indonesia*
- July 2017 – December 2021



Pak Mike (Australia)

From bilateral (NS) to SSTC - a change in roles by Indonesian partners from 'beneficiary' to 'pivotal' partners



SSTC in this project

“In SSTC, one country becomes a bridge - this bridge connects both.”

Cambodia



- Received training and applied new skills

Indonesia



- Delivered the training 20 years of aquaculture research and experience to share

Australia



- Funding/donor
- Mentoring and support
- Contributed expertise

Transfer Capacity Building Approach: Work-integrated learning (WIL)



Transfer capacity building to Cambodia: FiA staff trained

Training	Total	Female	Male
Fish Nutrition	7 staff	2	5
Larval Rearing and Disease Diagnosis	10 staff	4	6
Value Chain Analysis methods (provided by UniSC-Australia)	12 staff	4	8
Total	29 staff	10	19

- Trainees reported improved research, technical and non-technical skills (improved communication skills and confidence)



Outcomes - Cambodia

- Applied new skills through WIL experiments, such as:
 - Construction of larval rearing facility for several small experiment to improve survival of larval and juveniles of Asian seabass at MARDec
 - Formulation and testing of fish diets using local ingredients
 - Proximate analysis of feed ingredients
- Development of a database of ingredient composition for local use
- Publications in magazines and scientific journals



Feed Technology | 47

Local feed ingredients for Asian seabass diets in Cambodia

Replacing trash fish with local compound feeds requires firstly an evaluation on availability and nutritional composition of potential feed ingredients.

By Khum Sros, Mak Chankakada, Oem Ramana, Hoeun Phearum, Asda Laining, Usman, Michael A. Rimmer, Thay Somony and Hav Viseth

ASIAN SEABASS FARMING PRACTICES IN CAMBODIA

MAK CHANKAKADA, KHUM SROS, OEM RAMANA, HOEUN PHEARUM, ASDA LAINING, ROSNI, MICHAEL A. RIMMER, THAY SOMONY AND HAV VISETH

Cambodia has a short coastline of 435 km in four provinces: Kompot, Kep, Preah Sihanouk and Koh Kong. The bulk of aquaculture production in Cambodia is from freshwater but there is interest in developing coastal aquaculture and mariculture (FAO 2015). Production from coastal and marine aquaculture was 15,527 t in 2017 (FAO 2017),

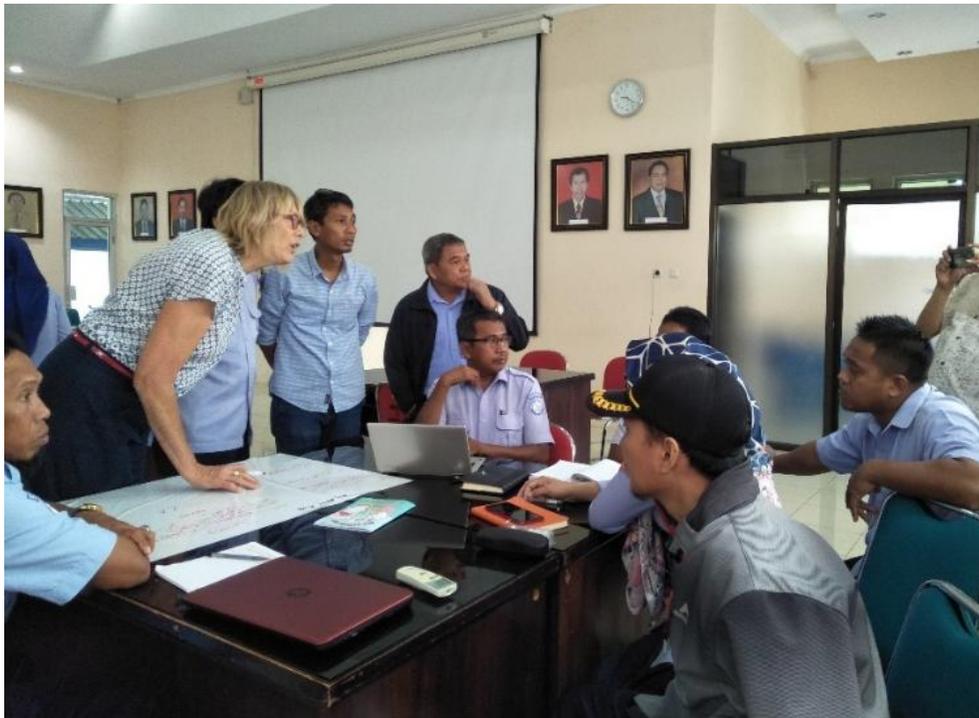


Hemisphere countries, where it is farmed in recirculating aquaculture systems (Tucker *et al.* 2005, Jerry 2013).

There is a small Asian seabass farming sector in Cambodia, reliant on the import of fingerlings from the neighboring countries of Thailand and Vietnam. In 2013, the Cambodian Fisheries Administration (FIA), with

Workshop on Delivery of Work-Integrated Learning during the SSTC by Prof Janelle Allison (UTAS):

Nine (9) modules have been developed



Developing training modules:

Introduction

Intended Learning Outcomes (ILOs)

Assessment tasks- *Take home task*

Learning activities

Time Table

- **Summary**
- **Benefit for Cambodia:** obtain technical support for sustainable aquaculture development and non-technical co-benefits to use new skills and knowledge to support other projects and activities
- **Benefit to Indonesia:** obtain support as former beneficiary country to transition to the pivotal partner role
- **Benefit to Australia:** Demonstration of SSTC approach for research and development in aquaculture

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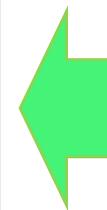
Marine Policy

journal homepage: www.elsevier.com/locate/marpol

Full length article

Applying a South-South Triangular Cooperation approach to capacity building: Bridging technological gaps and supporting sustainable mariculture in Cambodia

Michael A. Rimmer ^{a,*} , Silva Larson ^a, Somony Thay ^b, Asda Laining ^c, Haryanti ^c, Janelle Allison ^{d,1}, Courtney Anderson ^e, I Nyoman Adiasmara Giri ^c, Akhmad Mustafa ^c, Ahmad Muzaki ^c, Sri Redjeki Hesti Mulyaningrum ^c



Details of the SSTC has recently been published at Marine Policy (Rimmer at al., 2025)

Acknowledgments

Australian Centre for International Agricultural Research (ACIAR) for funding supports:

- Research projects related to the SSTC:
 - FIS/2016/130 Accelerating the development of finfish mariculture in Cambodia through south-south research cooperation with Indonesia
 - FIS/2018/115 Evaluating processes and outcomes in south-south research collaboration – finfish mariculture development in Cambodia through cooperation with Indonesia
 - FIS/2024/105 The value of using a South South Triangular Cooperation approach in mariculture for Cambodia and Indonesia
- Travel support to participate at the GAF9 Conference



Thank you for your kind attention