



# The Blue Swimming Crab Bulletin No.4

July to December 2015

Welcome to the fourth edition of the Seafood Exporters' Association of Sri Lanka's (SEASL) **Blue Swimming Crab Bulletin**. The FIP (fishery improvement project) has made reasonable progress again over the past six months, implementing a series of sub projects to improve the biological and ecological status of the Sri Lankan blue swimming crab (SLBSC) fishery. The FIP has also begun work on fishery specific management measures that will maintain the biological and ecological status of fishery at a level consistent with a 'sustainably managed fishery' according to international protocols for sustainably sourced seafood.

Over the last six months the National Aquatic Resources Research and Development Agency (NARA) has completed a yearlong scientific study the population biology of the SLBSC fishery. Dr. Jeremy Prince and Dr. Adrian Hordyck visited the FIP, providing technical assistance and encouragement. Students from Uva Wellasa University completed their final year research projects and the Department of Fisheries and Aquatic Resources (DFAR) and SLBSC fishing communities complete the first ever assessments of 'fishing effort' in both fisheries. At the end of the year fishermen's cooperative societies' unions (FCSU) launched campaigns against illegal, unreported and unregulated (IUU) fishing by Tamil Nadu trawlers in Sri Lankan waters. Details of all these activities and more can be found in this edition of the **Blue Swimming Crab Bulletin**.

## Improving the biological status of the stock



Dr. Sisira Haputhanthri, Principal Scientist of the Marine Resources Management Division at NARA and his staff completed the collection of field data for NARA's scientific study of the population biology of the SLSBC in December 2015. More than 35,000 BSC from four landing centres in Jaffna District during the past 12 months. NARA's field research programme was coordinated by the SEASL's field coordinator for the Northern Province, Theva Sutharsan.

Monthly samples collected by NARA's field research team have been analysed in the laboratory by NARA research officers. Key population biology parameters that will be established by NARA from the research include the length / weight relationship for male and female BSC; growth; mortality; size on maturity; fecundity; spawning seasonality and diet.

NARA's final report on the population biology of SLBSC in the Bay of Bengal will be submitted to the SEASL at the end of February 2016. NARA's research findings – the first published scientific study of blue swimming crabs in Sri Lanka – will be presented in the next Blue Swimming Crab Bulletin.

In August, Dr. Jeremy Prince the Director of [Biospheric](#) (Pvt) Ltd and Dr. Adrian Hordyck from the [Centre for Fish, Fisheries Research](#), Murdoch University in Western Australia conducted a national seminar and a technical workshop at NARA on length based spawning potential (LBSP). They also participated in a discussion on size selective harvest control strategies with staff of the Fishery Management Division of the DFAR. In December the FIP continued its collaboration with Dr. Prince and Dr. Hordyck, seeking to improve the estimates of the BSC life history parameters that are used to assess stock status in data poor fisheries using length based spawning potential.



A literature review and analysis of BSC scientific studies led to a revision of the estimates of each BSC life history parameter used by the FIP in earlier LBSP assessments as follows

Life History Parameters	Symbol	Previous	Revised
Mortality Growth Ratio	M/k	1.50	1.34
Length on 50% Maturity	L <sub>50</sub>	95 mm	100 mm
Length on 95% Maturity	L <sub>95</sub>	135 mm	135 mm
Average Maximum Length	L <sub>inf</sub>	170 mm	180 mm
Fecundity with Age	$\beta$	3.0	3.0

These values were then used by the FIP to generate revised Spawning Potential Ratios (SPR) for the SLSBC fisheries in the Gulf of Mannar and the Bay of Bengal, using an updated version of the online LBSP application '[What'sthecatch](#)' developed by Dr. Hordyck. The SPRs generated by the latest analysis are lower than the initial assessments of SPR for the SLSBC fisheries in both the Gulf of Mannar and the Bay of Bengal. This is due largely to the increased estimated average maximum size of female BSC. However, the latest SPR values for SLBSC stock in the Gulf of Mannar and Bay of Bengal are still above the Lower Target Reference Points (TRP) for a sustainably managed finfish fishery.

	Gulf of Mannar BSC Fishery	Bay of Bengal BSC Fishery
<b>Lower TRP</b>	<b>SPR = 30%</b>	<b>SPR = 30%</b>
<b>Upper TRP</b>	<b>SPR = 40%</b>	<b>SPR = 40%</b>
<b>Stock Status 2015</b>	<b>SPR = 36%</b>	<b>SPR = 37%</b>
<b>Management</b>	<i>fishing effort' should remain the same in 2016</i>	<i>'fishing effort' should remain the same in 2016</i>
<b>Districts</b>	Puttalam	Mannar, Kilinochchi, Jaffna



Ayantha Abeygunawardana a final year student from the Uva Wellessa University (UWU) completed her field work on the reproductive biology of the SLBSC in Mannar District in December. She was supervised by Dr. Sepalika Jayamana, Dean of the Faculty of Aquatic Resources and Export Crop Technology at Uva Wellasa University. Ayantha's final report and research paper on the reproductive biology of BSC in the Bay of Bengal will be published in March 2016. Her findings will be presented in next Blue Swimming Crab Bulletin.

## Improving the ecological status of the fishery

Researching and documenting the BSC fishery's impact on non target species (*i.e.*, the bycatch), critical marine habitats (*e.g.*, mangroves, coral reefs and sea grass beds) and the broader marine ecosystems in the Gulf of Mannar and the Bay of Bengal are crucial steps towards improving the ecological status of the BSC fishery.

Wathsala Dolawaththa another a final year student from the UWU completed his final year research project on the impact of the SLBSC fishery on non target species in the Bay of Bengal in December 2015. He too was supervised by Dr. Sepalika Jayamanne, Dean of the Faculty of Animal Science and Export Agriculture at Uva Wellasa University.

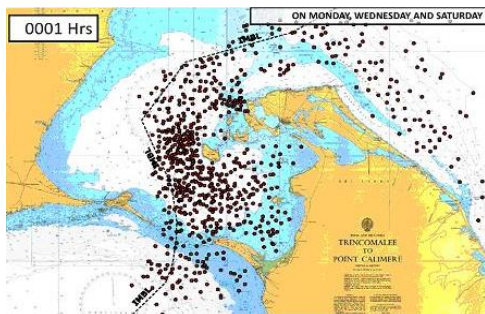
Wathsala's final report and research paper on the impact of the SLBSC fishery on non target species in the Bay of Bengal will be published in March 2016. His findings will be presented in next Blue Swimming Crab Bulletin.



## Improving the management of the SLBSC fishery

A comprehensive set of laws and regulations are available and used to govern and manage fisheries in Sri Lanka. However a set of rules and regulations specific to the SLBSC fishery has not yet been formulated. This is a key area of improvement that will be addressed by the SLSBC FIP in 2016.

Officers and staff of the DFAR took an important step towards formulating a set of rules and regulations specific in 2015. The DFAR successfully completed the first ever 'fishing effort' survey of the BSC fisheries the Gulf of Mannar and Bay of Bengal. The results of the 'fishing effort' surveys were shared with fishing communities, seafood companies and NARA through a series of workshops held at the district level and in Colombo in October and November. BSC fishing communities have also conducted their own assessments of 'fishing effort' in each BSC fishery. The results of the DFAR survey and the fishermen's cooperatives' survey will be discussed with fishing communities and DFAR staff in 2016. The outcomes of these discussions will be used to formulate a set of management rules and regulations specific to the SLBSC fishery.



Illegal, unreported and unregulated (IUU) fishing by Tamil Nadu trawlers and country boats continues to be the principal external obstacle obstructing the FIP's efforts to improve the management of the SLBSC fishery. Fishing communities are reluctant to discuss measures to improve the management of the BSC fishery, when they are prevented from fishing on three days every week, due to IUU fishing by Tamil Nadu vessels in Sri Lankan waters (see right). An appeal to the Supreme Court by presidents of three FCSU leaders on 5<sup>th</sup> October 2015, was deferred (again) until 20<sup>th</sup> January 2016. Sri Lankan fishermen are appealing against the Appeal Court's decision

in May 2015 to reject the fishermen's petition against the Attorney General's Department, for taking inappropriate action to deter Tamil Nadu trawlers from fishing illegally in Sri Lankan waters.

In June a [Facebook](#) page<sup>1</sup> was launched by civil society organisations to support Sri Lankan fishermen's fight against IUU fishing by Tamil Nadu vessels in Sri Lankan waters. The FB page provides daily media updates in Sinhala, Tamil and English on the Tamil Nadu trawler issue.

In October FCSU leaders from Jaffna (Anthony Emiliyampillai), Kilinochchi (Josep Francis), Mannar (N. M. Alam) and Mullaitivu (Mariadasa) launched a leaflet, poster and postcard campaign to stop IUU fishing by Tamil Nadu trawlers in Sri Lankan waters. 13,000 postcards were sent to the Sri Lankan President, Prime Minister, Leader of the Opposition, Fisheries Minister, Chief Minister. Postcards were also sent to the heads of foreign missions in the US, UK and EU calling for an immediate end to IUU fishing by Tamil Nadu vessels in Sri Lankan waters.



Anpan Sosai of Uva Wellasa University completed his study of the economic impacts of Tamil Nadu trawlers on small scale fishermen in Mannar District. He was supervised by Ms. Indika Wikramarathna, Faculty of Aquatic Resources and Export Crop Technology. Anpan's final report and research paper on the economic impacts of Tamil Nadu trawlers on small scale fishermen in Mannar District will be published in March 2016. His findings will be discussed in the next Blue Swimming Crab Bulletin.



<sup>1</sup> <https://www.facebook.com/STOP-Indian-Trawlers-1664473020454507/timeline/?ref=bookmarks>

## Social and economic equity

International protocols for FIPs and sustainably sourced seafood have yet to address social or economic issues associated with 'sustainably managed' fisheries. Members of the SLBSC FIP (*i.e.*, producers, processors and regulators) are committed to improving the biological and ecological status of the fishery and putting in place collaborative management measures that will maintain the sustainability of the fishery. The members of the FIP are equally committed to ensuring that all benefits that arise from improvements to the fishery are shared equitably between BSC fishing communities, BSC manufacturers (and their employees) and the Government of Sri Lanka.

Over the last six months the by the Poonakery FCSU successfully completed two sub projects to improve the social and economic equity of the fishery. First the management and micro enterprise development capacity of 11 FCS in Poonakery Divisional Secretariat Division were enhanced through cooperative development training and provision of cooperative book sets and banking support. All 16 FCS are now categorised as 'functional' by the FCSU. All FCS under the Poonakery FCSU now employ clerks to maintain cooperative society books and administration and deliver at least one 'service' to their members. The top six ranked FCS out of 11 were then provided with grants and training by the FCSU to start micro enterprises related to the fishery sector. All six societies are now engaged some form of fishery related micro enterprise (*e.g.*, buying and selling seafood or micro fuel station).



## SLBSC Fishery / FIP Status Report

The FIP commenced a six monthly 'internal assessment process' in December 2015 to estimate the status of the SLBSC fishery against three internationally recognized protocols for sustainably sourced seafood. The assessments are unofficial / internal / FIP dependent assessments of the status of the fishery. The results suggest that:



The FIP is currently at **Stage 3: Implementation** - encouraging *improvements*



The fishery's score against the MSC's Fishery Assessment Methodology (v2.0) is **0.37**. The FIP's internal assessment suggests that the fishery would **FAIL** the MSC's Standard for sustainable fisheries.



The overall score for the fishery against Seafood Watch's Criteria of Capture Fisheries (v2.0) is **2.12**. The FIP's internal assessment suggests that the fishery would be ranked **RED** and Seafood Watch would recommend consumers to **AVOID** SLBSC products.

**Moving the FIP forwards in 2016:** The improvements to the SLBSC fishery described above would not have been possible without the generous financial support of the National Fisheries Institute Crab Council (*SEASL core funding*). The International Labour Organisation's Local Empowerment through Economic Development (LEED) project (*with FCSU*), the Bay of Bengal Large Marine Ecosystem programme (*with DFAR*) and The Asia Foundation (*with the FIP*) also contributed generously to the successful implementation of the FIP. Members of the FIP are deeply grateful to these organisations and their staff for their continuing support, understanding and patience of all the efforts that are being made to improve the SLBSC fishery.



**Taprobane Seafood Group (Pvt) Ltd** in association with **Chicken of the Sea Frozen Foods** co-financed the Sri Lankan blue swimming crab FIP in 2015. Alpex Marine (Pvt) Ltd, Ceylon Catch (Pvt) Ltd, Ceylon Foods (Pvt) Ltd, OLS Foods (Pvt) Ltd and Prawn Ceylon (Pvt) Ltd are members of the Sri Lankan blue swimming crab FIP.

Soft copies of Blue Swimming Crab Bulletins in English, Sinhala and Tamil and key FIP documents can be downloaded from the SEASL website ([www.seasl.lk](http://www.seasl.lk)). For further details about the FIP please email [steve@pelagikos.lk](mailto:steve@pelagikos.lk)