

**Agreed plan of action following “Building Viet Nam’s capacity to under-take
Non-Detriment Findings for seahorses”, May 29-31, 2013**

Workshop participants indentified the level of risk from several pressures related to *Hippocampus kuda* in Viet Nam as medium or high – these included pressures from damaged and degraded seahorse habitats, and a complex, unmanaged and unregulated trade. However participants only identified three existing management measures appropriate for mitigating the medium/high risks associated with several issues: two MPAs and a seasonal fisheries closure (on coastal areas less than 0.5 m in depth). The enforcement and effectiveness of these measures are unknown. As a result, Viet Nam is not able to make a defensible NDF for its wild exports of *H. kuda* at this time (including F1).

Participants agreed there is a need for more research and management action before NDFs can be made for *H. kuda* and the trade can be re-opened. Participants also recognized the need to collect information on *H. trimaculatus* as Viet Nam’s trade in this species is currently under Review of Significant Trade. What follows are the agreed action points with respect to research and management action in support of sustainable trade. Completing these action points will also support Viet Nam to meet most of the recommendations set down by the CITES Animal’s Committee.

CITES Viet Nam is responsible for coordinating the completion of these action points, but we invite Project Seahorse to assist as time and resources allow.

Agreed Action Points following seahorse NDF workshop:

What	Who	Target	CITES Recommendation (see Table 2, below)	Jan 2014 Update	July 2015 update
Sig trade process					
Contact CITES Standing Committee to learn what Viet Nam needs to do to remove the ban on <i>H. kuda</i> exports	Dr. Tung (CITES MA)	15 June 2013		CITES reported to Project Seahorse that VN has to comply with the CITES recommendations, and report on them by the deadline. Project Seahorse noted that it is important to report on progress against recommendations, even where there remains work to do. Project Seahorse will send summaries of information on <i>H. kuda</i> , <i>H. trimaculatus</i> and <i>H. hirtix</i> to VN to support them to prepare their report for CITES.	PS sent summaries of information on <i>H. kuda</i> , <i>H. trimaculatus</i> and <i>H. hirtix</i> to VN CITES MA and SAs on 22 January 2014. Project Seahorse also offered input into the report CITES MA prepared for CITES Secretariat on <i>H. kuda</i> on 7 March 2014.
Trade research					
Develop proposal for trade research in Viet Nam	Dr. Ha (CITES SA) and Dr. Sarah (Project Seahorse)	15 July 2013	g	all agree this research is of crucial importance in order to understand the true nature of the seahorse trade in Viet Nam	Project Seahorse has developed a proposal in support of fundraising for the research.
Find funding for trade research	Project Seahorse	September 2013	g	Project Seahorse and Dr Ha have so far been unable to secure funding. CITES VN will explore potential funding sources in-country, but note that it could be a year or more before funds could be found at ministerial level. Project Seahorse will continue to look for international sources of funding.	Project Seahorse has secured a portion of the funds required for this research from The Mohamed bin Zayed Species Conservation Fund. We require additional funding in order to start the research.
Carry out field research	Collaboration among Dr. Ha (CITES SA) in partnership with Dr. Hoang (IO) and Dr. Ut (Can Tho University)	September -November 2013	g	need funding first	Need funding first
Analysis and report writing	Dr. Ha (CITES SA) and Dr. Sarah (Project Seahorse)	February 2014	g	need funding first	Need funding first

Biological research – ex situ					
Develop list of questions for industry (ex situ research) on matters relating to wild seahorse populations	Dr. Sarah (Project Seahorse) with Dr. Hoang (IO)	31 July 2013	e, f	Project Seahorse and Dr. Hoang have drafted a questionnaire – Dr. Sarah will work with Dr. Ha to finalise it for distribution.	The list was finalized by Project Seahorse in collaboration with IO, and sent to VN CITES MA on 21 February 2014 for translation and distribution. Project Seahorse is not aware if this list was ever distributed to breeding operations in VN.
Coordinate industry to collate biological information on wild populations as inferred from accessing broodstock – where/how captured, what sizes, times of year, reproductive state, brood size, etc.	Dr. Hoang (IO) (to coordinate)	31 August 2013	e, f	IO does not want to coordinate as they feel it would carry more weight if request for information comes from CITES; Dr. Sarah will discuss this with Mr. Bat, (SA for fisheries issues in VN) – as he should be the one to coordinate collection of information.	Mr. Bat (Dept of Fisheries) agreed to be the point person for data collection from breeding operations. VN CITES MA was informed of this in email from Project Seahorse on 21 February 2014. CITES MA acknowledged receiving the document on 24 February 2014.
Put IO in touch with aquarium culture community, and seahorse husbandry manual	Dr. Sarah (Project Seahorse)	July 15, 2013		completed	Completed
Coordinate with industry to consolidate all information to improve culture approaches and increase chance of viable F2	Dr. Hoang (IO)	Ongoing		have to check progress with Dr. Hoang	Have to check progress with Dr. Hoang

production					
Biological research – in situ					
Develop proposal and find funding for seahorse research in strategic areas of VN	Project Seahorse	Late 2013	e	PS is making steady progress on this action item and will be ready to carry out research in summer of 2014.	Project Seahorse secured the funding to carry out this research in Phu Quoc.
Execute field work in strategic areas of VN (possibly Phu Quoc, Con Dao or Phu Yen).	PS in partnership with VN counterparts	mid 2014	e	PS proposes to collaborate on <i>in situ</i> research in Phu Quoc this summer (2014) (Ally Stocks MSc project) – need support from VN to set up and carry out research. Dr. Sarah will travel with Mr. Manh to Phu Quoc to set up collaboration.	Project Seahorse MSc student, Ally Stocks, carried out this research in collaboration with RIMF in the summer of 2014. She is in the process of analyzing and writing up her findings. We will share first results with VN in support of their report to CITES wrt to <i>H. kuda</i> .
Fisheries research					
Explore whether seahorses can be added to existing fisheries dependent monitoring in Viet Nam	Mr. Cuong (Dept of Fisheries)	July 2013	g	Dr. Sarah to follow up with Mr. Bat	We are not aware if seahorses have been added to existing fisheries dependent monitoring in Viet Nam.
Develop and send landings sampling protocol	Dr. Sarah (Project Seahorse)	Nov 2013	g	this is under development by Project Seahorse and new target for sending to VN is March	Protocol was finalised and sent to VN CITES SAs and MAs on 21 March 2014.
Use sampling protocol to document seahorse landings in Phu Quoc and two other island in Vung Tau	Dr. Thi (Southern Sub-Institute of Fisheries Research), Dr. Ut (Can Tho University)	2014	g	PS proposes to collaborate on fisheries sampling in Phu Quoc in summer 2014 (Ally Stock MSc project) – need support from VN to set up and carry out research. Dr. Sarah will travel with Mr. Manh to Phu Quoc to set up collaboration. Project Seahorse will also liaise with Dr. Ut prior to starting research.	Project Seahorse MSc student, Ally Stocks, carried out this research in collaboration with RIMF in the summer of 2014. She is in the process of analyzing and writing up her findings – and we will be sharing these results with Viet Nam in support of their report to CITES wrt to <i>H. kuda</i>
Prepare report on seahorse landings, by time and space	Dr. Tung (CITES MA) with Dr. Ha (CITES SA)	2014	g	Dr. Tung should include results of Dr. Ut's research on seahorse landings in report to CITES, and explain collaboration with Project Seahorse	Project Seahorse is preparing a report on seahorse landings for Phu Quoc – the results of collaborative research activities with RIMF. We are not aware of a report other than this.

Spatial and temporal protection for seahorses in VN					
Send map indicating current and proposed MPAs in Viet Nam to Mr. Tung	Mr. Cuong (Dept of Fisheries)	15 July 2013	a	have this map – but need shape files to allow for mapping in GIS; Dr. Sarah to follow up with Mr. Bat	We are not aware if CITES MA has received these files from Dept of Fisheries.
Send maps of coral, seagrass, mangrove, and other seahorse habitats to Mr. Tung	Mr. Bat (Dept of Fisheries)	15 July 2013	a	Dr. Sarah to follow up with Mr. Bat	We are not aware if CITES MA has received these files from Dept of Fisheries.
Send map indicating current spatial and temporal fishing closures in Viet Nam to Mr. Tung	Mr. Bat (Dept of Fisheries)	15 July 2013	a	Dr. Sarah to follow up with Mr. Bat	We are not aware if CITES MA has received these files from Dept of Fisheries.
Send maps to relevant stakeholders asking them to indicate spatial distribution of <i>H. kuda</i> and <i>H. trimaculatus</i>	Mr. Tung (CITES MA)	31 July 2013	a	this will come out of contributions to iSeahorse, as well as Project Seahorse proposed research in Viet Nam	Progress has been made in our understanding of seahorse distributions in Viet Nam as a result of Project Seahorse collaborative research efforts in Viet Nam – but it is clear that limited information will be gained through underwater survey efforts. It is much more efficient to carry out fisheries surveys to deduce where seahorses are being caught along Viet Nam's coasts.
Determine how to access dive shops/clubs in order to publicize iSeahorse – citizen science site for seahorses	Dr. Sarah (Project Seahorse) and Dr. Tung (CITES MA)	October 2013	a, g	CITES VN supports this project – happy to prepare letter of support for dive clubs etc for Project Seahorse to use in promotion	From February to April 2014, Project Seahorse researcher Dr Tse-Lynn Loh engaged Viet Nam's diving, conservation and research community in contributing information on Viet Nam's seahorses through iSeahorse. She promoted iSeahorse through site visits, lectures and workshops.

Develop MOU between UBC and Dept of Fisheries in Viet Nam	Dr. Sarah (Project Seahorse) and Mr. Bat (Dept of Fisheries)	31 July 2013		done and signed	Done and signed
Develop MOU between UBC and IO in Viet Nam	Dr. Sarah (Project Seahorse) and Dr. Tuan (IO)	31 July 2013		Project Seahorse to follow up with IO	Not yet done
Secure research permission for Rapid Assessment of seahorse distribution, seahorse trade and seahorse biology in Viet Nam	Dr. Sarah (Project Seahorse) and Mr. Bat (Dept of Fisheries)	31 September 2013		ongoing – Dr. Sarah to follow up with Mr. Bat	Done
Carry out RAP – field work	Project Seahorse	January-February 2014		Project Seahorse proposes to start this research in February of 2014, pending research permission.	Research was carried out February to April 2014.
Preliminary analysis and report writing for CITES AC meeting	Dr. Ha (CITES SA) with Dr. Sarah (Project Seahorse)	March 2014			A report on findings from RAP was sent to Vietnamese collaborators and partners in the months following the field work.
Map seahorse distribution in Viet Nam, based on information from all other steps	Dr. Ha (CITES SA) with Dr. Sarah (Project Seahorse)	March 2014	a, f	required data is pending results from proposed research collaborations	Completion of this map is pending results from trade research, for which we are still seeking funds.
Map overlay of seahorses / seahorse habitats and MPAs (and other spatial management)	Dr. Ha (CITES SA) with Dr. Sarah (Project Seahorse)	March 2014	a, f	need above mentioned information on seahorse distributions, habitats, management measures etc first	Need above mentioned information on seahorse distributions, habitats, management measures etc first.

NDF framework for seahorses					
Revise NDF framework and send back to CITES Viet Nam for further comment and consideration	Dr. Sarah (Project Seahorse)	31 August 2013	c, f	Project Seahorse has revised the NDF framework and returned it to CITES VN; CITES VN will look into having it translated into Vietnamese	We are not aware if CITES VN translated the framework in Vietnamese.
Review revised NDF framework	Dr. Ha (CITES SA) with Dr. Tung (CITES MA) and colleagues	31 September 2013	c, f	Done	Done
Finalise NDF for AC27	Dr. Tung (CITES MA) and Dr. Ha (CITES SA) with collaborators	March 2014	c, f	CITES MA to do this, calling on Project Seahorse for support as needed	We are not aware that NDFs have been made for seahorses in VN.
Find funds for CITES Viet Nam to attend AC27	Dr. Tung (CITES MA), Dr. Ha (CITES SA) and Dr. Sarah (Project Seahorse)	January 2014		Search ongoing	CITES VN was not in attendance at AC27.

Table 2: Research and action recommendations provided by the CITES Animals Committee to Viet Nam's CITES Management Authority for *Hippocampus kuda*, which was listed as "Possible Concern" during a CITES Review of Significant Trade

Within 90 days the Management Authority should:

- a. Clarify what legal protection is afforded to the species and inform the Secretariat whether the present policy allows for export of wild-taken specimens;
- b. If there is no intent to allow export of wild specimens of this species for the foreseeable future establish a zero export quota which should be communicated to the Parties by the Secretariat; or
- c. If trade is to be allowed, provide a justification for, and details of, the scientific basis by which it has been established that export is not detrimental to the survival of the species and is in compliance with Article IV, paragraphs 2 (a) and 3, taking into account any potential unregulated and/or illegal off-take and trade;
- d. Initiate measures to ensure that descriptions on all CITES permits are standardized such that trade is only permitted at **species level** and that, in compliance with Resolution Conf. 12.3 , XIV e), trade ceases to be reported or permitted at higher taxon levels (genus or family).

Within 2 years the Management Authority should:

- e. If trade in wild specimens is anticipated in the future conduct a study of the life history parameters of *H. kuda*, including growth rate, size and age at maturity, average annual reproductive output and annual survivorship of different age classes and make the results available to the Secretariat. Based on the outcome of this study, model population responses to exploitation pressures in order to review and revise export quotas; and if they *intend* to trade the species in the future,
- f. Provide to the Secretariat a justification for, and details of, the scientific basis by which it has been established that any proposed export quota for wild specimens of *H. kuda* will not be detrimental to the survival of the species and is in compliance with Article IV, paragraphs 2 (a) and 3
- g. If trade in wild specimens is anticipated in the future, establish a detailed monitoring program of landings of *Hippocampus kuda* at representative sites, taking into account different gear types and means of extraction and recording catch and effort metrics and provide a report to the Secretariat;