

Are Vietnamese fisher-divers aware of the need to preserve their health and maritime environment?

Jean Ruffez^{1*} and AFEPS¹

Introduction

In the mid-1990s, the Institut Pasteur of Nha Trang, which monitors the health of fishers in central Vietnam, alerted the Association francophone d'entraide et de promotion des sciences de la vie (AFEPS) to the high mortality and morbidity of fishermen who dive using compressed air to carry out their fishing activities. These 'fisher-divers' collect everything that has a market value and, essentially, any holothurian that they find at depths of up to 65 m. Responding to the alert, the AFEPS Aid to Fishermen Divers programme was established in Vietnam in 1998. The programme operates in two provinces: Khanh Hoa and Binh Thuan, where more than 200 people have been trained in safe diving techniques.

Training in Khanh Hoa Province

In Khanh Hoa Province, we, at AFEPS, sensed there was a willingness on the part of both fisher-divers and local authorities to move towards the use of protected marine areas and more sustainable fishing practices.

In the village of Ninh Phuoc (Ninh Hoa District), fisher-divers have joined forces with the maritime police (voluntarily or not) to conduct night patrols in protected areas and prevent 'electric fishing' and the use of chemicals to capture fish and other marine organisms.

A large number of fisher-divers, sometimes too many, expressed interest in receiving training in accident prevention, accident management and first aid adapted to seafarers.

We were surprised by the number of active fisher-divers who have already had neurological accidents and are still suffering from their after-effects. All fisher-divers complained of osteoarthritis and muscular pain.

The local People's Committee² has organised the handling of accidents and have distributed TIR (therapeutic immersion recompression) kits in clinics along the coast. In this way, injured divers can quickly benefit from the equipment necessary to

manage their accident (e.g. oxygen and re-immersion kit). We do not know, however, how boats leaving for a long-distance fishing trip are able to access the rescue equipment or if they are allowed to carry TIR kits.

Indeed, several crews continue to head to the distant coasts of countries bordering the South China Sea (East Sea for the Vietnamese). They have difficulties fishing in the Paracel or Spratly Islands and prefer to go to Malaysia, Indonesia and the Philippines. Some crews go even farther out to sea.

During the training, we noted that fishermen who dove frequently understood that their enemy is the nitrogen (nito in Vietnamese) they breathe under pressure. Even if they did not entirely give up some of their beliefs – such as blaming a diving accident on either 'an evil wind' or 'an offence allegedly done to an ancestor' or 'the omission of a tribute paid to the sea before diving' – they took into account our advice on the rate of ascent (tu tu, go slowly in Vietnamese). They especially agreed to make stops and never to recompress themselves to a depth of more than 9 m.

Trained people told us that our 40-L oxygen cylinders were too heavy and difficult for one person to handle. We have, therefore, decided that in the future we will purchase 20-L oxygen cylinders. This volume allows only one oxygen TIR and two

¹ Association francophone d'entraide et de promotion des sciences de la vie. 8, rue du Général-Renault, BP 167 - 75011 Paris. AFEPS is a French non-governmental organisation involved in collaborations with fisher-divers (see: <http://purl.org/spc/digilib/doc/v4nj5>).

² In Vietnam, the People's Committee (Ủy Ban Nhân Dân) is the executive arm at provincial level, and is responsible for formulating and implementing policy (source: https://en.wikipedia.org/wiki/Provinces_of_Vietnam#Governance).

* Email: afepsparisiledefrance@gmail.com



A. Theoretical training; B. In the corridor for exercises; C. Therapeutic immersion recompression (TIR) practice at sea; D. Group photo.

hours of normobar oxygenation. Ideally, two 20-L cylinders should be available. This is what we recommend for recreational diving clubs working in isolation.

Training three lecturers from Nha Trang Sea University

During the course of the programme, three lecturers from the Nha Trang Sea University were introduced to diving and followed the training of fisher-divers. We hope they will be able to add the prevention and management of diving accidents to the training curriculum for seafarers and future seafarers, a programme under their responsibility at the university.

Training in Binh Thuan Province

In Binh Thuan Province, where AFEPS began operations, we appreciated the cooperation of three governmental departments: Health, Maritime Affairs and Maritime Police.

We first trained about 50 medical staff, and discussed with them the different accidents that can happen to divers. Our delegate in Vietnam, Dr Nguyen Van Mui, was able to explain the projected images and texts directly in the Vietnamese language. We discussed diving accident management techniques and the equipment needed to deal with them.



Practical training of three lecturers from Nha Trang Sea University.

We then trained a dozen crew members of diving fishing boats. We conducted the theoretical training at the Maritime Affairs Department. The practical training at sea was organised in the port of Phan Thiet. AFEPS gave 10 TIR kits (one 40-L oxygen cylinder, a pressure reducer, 12.5-m hose and a nitrox octopus) to these crews. The kits will be kept onboard the boats. These boats are used for distant fishing and we are confident that the kits, if needed, will be used by trained people.

Throughout the crew training, we were very satisfied with the involvement of the three government departments. Their representatives actively

participated in the training sessions and showed great enthusiasm.

It now seems to us that training could be done in fisher-diver villages along the coast of the province and especially on the islands that shelter most of the divers.



Training at sea.



Training of medical personnel by Dr Nguyen Van Mui.

In 2019, we will respond to new requests from three additional provinces (Khanh Hoa, Binh Thuan and Quang Ngai), and will continue to train teacher-researchers at Nha Trang Sea University if they so wish and if the university authorities encourage them to do so. We plan to relaunch our assistance to disabled diving fishers (self-rehabilitation training). We have also requested the Hanoi authorities to renew our work permit, which ends in October 2019. We hope to have it extended for several more years.