



## ABSTRACT OF MISSION REPORT No. 147

**DATES:** 30 July 2002 to 7 August 2002

**MOTIVATION:** Feasibility assessment of the ecosustainably production of mother of pearl in Vietnam

**VISITED PLACES:** Ho Chi Minh City, Nah Trang, Xa Ninh Loo, Ninh Van, Vung Roa, Siy Giang (Vietnam).

**MEETINGS:** Mr. Emanuele Bertoli (CEO, Berbrand srl), Mr. Pier Giuseppe Facondo (Vice-President Berbrand srl), Mr. May Van Huy (Presidente of Hansa Co., Vietnames partner of Berbrand srl), Dr. Piegiuseppe Bucca (IT expert, Extetica srl), Dr. Dang Ba Tho (UNIDO Delegate in Vietnam), Dr. Stefano Gatti (Finalcial Analyst, UNIDO), Mr. Tran Anh Khanh (Deputy Director of New Indocina Co. Ltd), Dr. Vo Si Tuan (Deputy Director, Head of Marine Resources Department, Institute of Oceanography, Nha Trang), Dr. Nguyen Xuan Hoa (senior Researcher, Institute of Oceanography), Dr. Pham Van Thom (Head of Hydrogeochemistry Department, Institute of Oceanography), Dr. Nguyen Kim Hoa (oceanographer, Deputy Director of the Department of Science, Technology and Environment in Khanh Hoa), Dr. Nguyen Van Huot (Head of Unit, Environmental Management Division of the Department of Science, Technology and Environment in Khanh Hoa), Dr. Nguyen Chien Thang (Deputy Director, Khanh Hoa Fishery Management Office), Mr. Ho Van Trung Thu (IUCN Project Coordinator, Hon Mun Marine Protected Area Pilot Project), Mr. Jady Smith (IUCN Environmental Awareness Specialist), Mr. Truong Kinh (IUCN Aquaculture Planning Consultant), Dr. Doan Van Dau (IUCN Aquaculture Planning Consultant), Dr. Lyndon DeVantier (IUCN Marine Biodiversity Specialist).

The mission in Vietnam has been planned for assessing the feasibility of the sustainable production project for the mother-of-pearl agreed between Berbrand srl and the Genoa Aquarium Foundation, as a first step of a process for an ethic, environmentally friendly, equitable and sustainable certification.

The details of the project were many and therefore it has been necessary to contact several Vietnamese official institutions and experts, in addition to the local Authorities and the experts of both IUCN and UNIDO.

Most of the effort has been devoted for checking the following issues:

1. the effective farming opportunities for the first life stages of *Trochus* spp. in the tanks facilities at the Institute of Oceanography in Nha Trang;
2. the knowledge, expert skills and availability of experts for the reproduction of *Trochus* spp., at the Institute of Oceanography in Nha Trang;
3. the availability of protected sites for the floating cages of the juveniles *Trochus* spp. in the Marine Protected Area in Hon Mun;
4. the various alternative options for deploying the floating cages for adult shells;
5. the restocking opportunities in the wild on the coral reefs offshore;
6. the legal and institutional framework for the operational part of the project.

For the first point, the farming opportunities in the Institute of Oceanography are very good and suitable; they can be easily further improved for better keeping the veliger larvae of the shells, but the situation is really optimal, because they also use direct income of marine freshwater, regularly testing the quality.

For the second point, Dr. Nguyen Xuan Hoa is a passionate expert of invertebrate reproduction, with a long and practical experience. In the past, he already tried to reproduce *Trochus* spp. in tanks, with a good success, but it was done just for some personal trials. We discussed extensively all scientific issues and the project received the full enthusiastic support of the various Heads of Department and the Direction of the Institute of Oceanography, particularly because the circular economy and the high environmental sustainability of the project. The Institute declared the full availability of all the necessary scientific and technical staff at no costs.

For the third point, the IUCN experts in charge of the Marine Protected Area of Hon Mun declared their full support to the project and the availability of a dedicated area long the coastal side of the island, where the small floating cages with the juvenile *Trochus* shells will safely growth, up to the sub-adult stage. They also recognised the nice opportunity for the new MPA to demonstrate that the area can be used also for very practical and sustainable projects.

For the fourth point, together with the local scientists and authorities, it was decided to visit three different areas:

- a) the fishers village of Ninh Van (Xa Ninh Phu Peninsula, Bay of Dam Nha Phu);
- b) the fishers village of Vung Roa (Phu Yen Province);
- c) the fishers village of Diy Giang (Tinh Khanh Province, Gulf of Vinh Van Pong);

In each village, we hold meetings with the fishers and the head of the villages, for discussing the location, the feasibility and the opportunities for the floating cages with adult shells. After evaluating also the oceanographic and environmental conditions in the various sites, the best location resulted the small village of Ninh Van, where there is a semi-closed bay, with some coral rocks, where the floating cages can be kept very easily under control by the local fishers. Furthermore, in this area there are wild benthic communities of *Trochus* spp., *Pinctada* spp and *Pteria* spp., living on coral rocks.

For the fifth point, we discussed with the colleague of the Institute of Oceanography of Nha Trang, of the Department of Science, Technology and Environment in Khanh Hoa, of the Khanh Hoa Fishery Management Office and the IUCN experts, the restocking opportunities that the project would be able to create for the coral reefs currently overexploited by the local fishers, off the area of Nha Trang. Those reefs were originally populated by a dense stock of *Trochus* spp., which have been exploited for decades without any previous management. Now, they are under the Vietnamese Authority management and it would be very important to improve the stock status. The percentage of *Trochus* spp. that the project should be able to release in the wild for restocking will go from an initial 20% to more than 50%, depending on the yearly success of the reproduction. Over the year, and taking into account that the grazing activity of the *Trochus* spp. are usually beneficial for the corals, this shall result in a substantial environmental improvement.

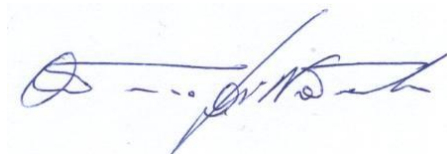
For the sixth point, the local Authorities and the UNIDO experts stated that the project can be easily managed within the existing environmental regulation in Vietnam, having absolutely no impact at any stage of the implementation. On the opposite, both expressed their very positive opinion on the innovative approach of the project and particularly for the full use of any part of the mollusc at the final stage of the production, the opportunity for improving the natural reefs and the solidarity approach with the local communities. The UNIDO experts asked to use the project as an example of best practices in this field, to be exported in many other parts of the World.

At the end of the meetings, together with the local Authorities and the local scientific community, it was decided to initiate a first pilot project, for better assessing any possible problem and the costs & benefits, but also the opportunity to fully transfer the knowledge behind the project to the local experts and communities.

It was also decided that a second mission in the following years would evaluate the results of the pilot project.

It was decided also to transfer some live individuals of *Trochus* spp. to the facilities of the Genoa Aquarium, for better studying their biological characteristics. The individuals were duly authorised by the local Authorities and the Veterinary Service at the Custom of Ho Chi Minh Airport and finally transferred at the Tropical department of the Genoa Aquarium

Genoa, August 8, 2002.



Dr. Antonio Di Natale  
Scientific responsible