

H₂O Studies 101



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Dr. Masaru Tanaka, chief research fellow at the International Institute for Advanced Studies, set out his vision for H₂O Studies (or H to O, Headwater to Ocean Studies) in 2003, having spent more than forty years conducting ecological research into marine larval fish. Toshio Matsubara spoke to Tanaka about the aims of this new academic discipline.

Dr. Masaru Tanaka, chief research fellow at the International Institute for Advanced Studies

What sort of discipline is H₂O Studies?

Dr. Masaru Tanaka: H₂O Studies is an integrated study program for restoring the linkage between forest and the sea. For human beings, issues relating to water (H₂O) have become extremely serious in the twenty-first century. As well as the English “H₂O,” the name also refers to the concept of “Headwater to Ocean,” covering the flow of water from the river’s source down to the sea.

Leaf mulch from the forest produces dissolved iron, which is an essential nutrient for plankton. Rivers then carry the dissolved iron into the sea, ensuring a plentiful supply of food. River basin wetlands are also a key source of dissolved iron. However, leaf mulch has not built up in the mountains as the forests have increasingly become ravaged. In addition, we are seeing more and more cases where sufficient levels of dissolved iron do not flow into the sea owing to riverbank revetments. This is one of the main reasons why fish catches have declined in coastal waters. The aim of H₂O Studies is once again to restore these natural links be-

tween the forests, rivers and seas, which mankind has destroyed.

What will research and activities as part of H₂O Studies actually involve?

H₂O Studies is closely linked to the non-profit organization *Mori wa umi no koibito* (The Sea Is Longing for the Forest), which began in Kesenuma in Miyagi Prefecture in 1989. Shigeatsu Hatakeyama started the movement with an emphasis on restoring mountain forests, which would then clean up the polluted seas and breathe life back into oyster farming. Hatakeyama holds a tree-planting ceremony every year as a symbol of the movement. He also puts efforts into environmental education for children. Every year, around 500 children are invited to the fishing village so that they can experience the sea for themselves. This enables them to genuinely appreciate how the mountains, the village and the sea relate to one another, and understand that their lifestyles have a direct impact on those of the local fishermen.

As a result, children have started to halve



the use of toothpaste and soap, or asked to reduce the use of pesticides if they are from farming households, much to the surprise of their parents. The actions of their children have brought about a change in awareness amongst local people, and have even prompted the local authorities to take action to significantly improve the environment within the river basin.

Can H₂O Studies bring to the restoration process in areas affected by the earthquake?

I believe that the first step towards creating an integrated primary industry based on intimate linkage between forests and the sea is to revitalize the forestry and coastal fishing industries at the same time. There are plans to rebuild houses that were destroyed by the tsunami in fishing villages using earthquake-resistant (frame) con-

structions and Ecology Dry System (EDS) techniques using wood from local forests. EDS is a treatment process that involves heating and smoking wood as soon as it has been cut down so that it can be turned into solid building materials in the space of just five days, rather than the usual process of drying wood for at least a year. This has the added advantage of producing good quality building materials from any species of tree. Logging also used to be limited to the period from early fall to winter, when trees stop sucking moisture out of the ground. Whereas this used to be a key factor in ensuring that wood could dry naturally and efficiently, EDS makes it possible to continue logging all year round. It is a revolutionary technique that has the potential to kick-start the forestry industry. 

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Feeding the Oysters

Kesennuma in Miyagi Prefecture was badly damaged in the tsunami generated by the Great East Japan Earthquake. The tsunami washed away the oyster farming facilities, boats and offices operated by Shigeatsu Hatakeyama, the representative of *Mori wa umi no koibito* (The Sea Is Longing for the Forest). However, following the earthquake, vast numbers of volunteers have descended on Kesennuma and made progress removing the wreckage around the oyster farming facilities. In June, as has happened each year since 1989, a tree-planting ceremony of broadleaf trees also took place as usual. In August, the organization received the Suntory Prize for Community Cultural Activities.

On September 13 in Tokyo, Hatakeyama held a seminar on assistance for the disaster-affected region.

“The mountains, the sea and rivers are intimately linked. That’s why it is necessary to properly maintain the mountains,” said Hatakeyama. “Conducting adequate tree thinning and tree trimming operations brings light to the underbrush and encourages fresh growth. As well as generating employment, this kind of work aids in the reconstruction of buildings using local timber, and before we know it, dissolved iron will be flowing out and enriching the sea as well. I hope that this earthquake serves as the impetus for the creation of new models such as these.”



Shigeatsu Hatakeyama, oyster farmer and representative of *Mori wa umi no koibito*

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