



Thierry Chopin was an invited panelist at the 7th edition of the **Monaco Blue Initiative**, which, this year, was held in **São Paulo, Brazil**, April 3-4.

The Monaco Blue Initiative (MBI) was launched in 2010 at the initiative of **HSH Prince Albert II of Monaco**, and is co-organized by the **Prince Albert II of Monaco Foundation** and the **Oceanographic Institute, Foundation Albert I, Prince of Monaco**. Its members meet annually to discuss the current global challenges of ocean protection and preservation. The MBI is an effective platform for communication and exchange between representatives from different backgrounds: scientific, entrepreneurial, political decision-makers and civil society. It aims to analyze and put forward the possible synergies between the protection of marine ecosystems and socio-economic development.

The theme of this year's edition of the MBI was "Sustainable aquaculture at the heart of a blue economy". Around 60 participants met to discuss various topics focused on four panel sessions: 1) Sustainable aquaculture in South America: trends and challenges; 2) No waste, no pollution, more value: aquaculture in the circular economy; 3) Engaging consumers and stakeholders towards sustainability; and 4) Oceans' role in climate change.



Thierry Chopin with HSH Prince Albert II of Monaco (photo credit: Roy Palmer).



Group picture of the participants in the 7th edition of the Monaco Blue Initiative in São Paulo, Brazil (photo credit: ©Gregory Grigoragi-Monaco Blue Initiative).



Thierry Chopin was one of the four panelists of the second session. As Integrated Multi-Trophic Aquaculture (IMTA) is about optimizing systems, nature bio-mimicking, industrial ecology, and considering nutrients not as waste but food, it fits very well within the circular economy approach. Beyond recapturing biological nutrients, IMTA is also about giving more value to co-products, through their valorization and the regenerative diversification of their applications. The IMTA multi-crop diversification approach could also be an economic risk mitigation and management option to address pending climate change and ocean acidification impacts. In many countries, including Canada, flexible and enabling regulatory changes will be needed for the implementation of innovative aquaculture practices, such as IMTA. The ecosystem services provided by extractive aquaculture will have to be recognized, properly valued and used as financial and regulatory incentive tools (*e.g.* nutrient trading credits). In summary, the time has come for the Turquoise Revolution, a greener Blue Revolution, and the development of aquanomy (just as we have agronomy on land). It was remarkable to see the dedication of HSH Prince Albert II of Monaco who attended the whole conference, taking notes, listening to the debates, taking a picture with his cell phone of Thierry Chopin's well-known slide explaining the functioning of IMTA systems, and wholeheartedly laughing when Thierry Chopin did his IMTA dance (a variation on YMCA by Village People!). The Prince, who is a very approachable person, told him, later in the day, that it was a great way to make sure that he will remember IMTA in the future!







Read the articles:

In English:

- “Dr. Thierry Chopin in São Paulo, Brazil, for the Monaco Blue Initiative” in *UNB Newsroom*, on April 13, 2016.

<http://blogs.unb.ca/newsroom/2016/04/13/dr-thierry-chopin-in-sao-paulo-brazil-for-the-monaco-blue-initiative/>

- “UNB prof dances way into royal spotlight during conference in Brazil” by Alex Consiglio, in *The Telegraph Journal*, on April 15, 2016.

<http://www2.unb.ca/chopinlab/articles/files/Telegraph%20Journal%20160415.pdf>

In Portuguese:

- “Príncipe Alberto promove em Brasil a aquicultura como pilar de “economia azul” in *el Nuevo Herald*, on April 5, 2016.

<http://www.elnuevoherald.com/noticias/mundo/america-latina/article69941477.html>

- “El príncipe Alberto II de Mónaco aboga por la acuicultura como elemento clave de la “Economía azul”” in *IPAC. acuicultura*, on April 5, 2016.

http://www.ipacuicultura.com/noticias/ultima_hora/47864/el_principe_alberto_ii_de_monaco_aboga_por_la_acuicultura_como_elemento_clave_de_la_economia_azul.html

- “Uso sustentável dos recursos aquícolas e aquicultura sustentável” in *UNESP Newsletter*, on April 11, 2016.

<http://www.clp.unesp.br/#!/noticia/133/uso-sustentavel-dos-recursos-aquicolas-e-aquicultura-sustentavel/>

In French :

- “Clôture de la 7e Monaco Blue Initiative à São Paulo” in *Monaco Channel, La Chaîne du Développement Durable de la Principauté*, on April 6, 2016.

<http://www.monacochannel.mc/Chaines/EnvironnementS/Actus/Cloture-de-la-7e-Monaco-Blue-Initiative-a-Sao-Paulo>

Watch the video:

“7e édition de la Monaco Blue Initiative à São Paulo” on April 11, 2016.

<https://www.youtube.com/watch?v=RDs720PnSrc1015>.



Following the MBI conference, Thierry Chopin spent 4 days with **Wagner Valenti** (professor at the São Paulo State University, UNESP), **Patricia Valenti** (professor at UNESP and the Universidade de Santo Amaro, UNISA) and **Janaina Mitsue Kimpara** (technical coordinator of the Mid-North Research and Development Centre of EMBRAPA, the Brazilian Agricultural Research Corporation). He gave a seminar entitled “Responsibly farming marine and freshwaters through the development of Integrated Multi-Trophic Aquaculture (IMTA) practices” at the São Vicente and Jaboticabal campuses of UNESP. They also worked on the possibility of developing a project on marine and freshwater IMTA in the context of food security in Brazil.



Jack Langenhuizen, MOTUS O's Co-Artistic Director, with the Artistic Company of the Year Award from the Province of British Columbia (photo credit: James Croker).

Motus O Dance Theatre wins the Artistic Company of the Year Award from the Province of British Columbia.

Ontario dance theatre company **MOTUS O** recently returned from touring British Columbia, as well as the Banff Centre in Alberta, with the “BEST OF MOTUS O ~ 25th Anniversary Tour”. Included in the series of short works performed was the commissioned piece *IMTA* created in collaboration with **Thierry Chopin** in 2007 (see *CIMTAN Snippets* special issue Vol. 2, No. 5). This 15 minute piece (much more elaborate than the YMCA/IMTA jig Thierry Chopin uses in his presentations!) was brilliantly received in theatres across the two provinces. Following this tour, MOTUS O received British Columbia's 2016 Artistic Company of the Year Award, which is an incredible honour for a visiting company to this province. The Artistic Company of the Year is awarded, annually, by the British Columbia Touring Council for artistic excellence and for demonstrating the highest degree of professionalism in touring.

MOTUS O's Co-Artistic Director, **Jack Langenhuizen**, was absolutely thrilled to have been presented with this award, at the Hilton Hotel in Burnaby, British Columbia, on April 2, 2016. “It was the cherry on the cake to have just completed the celebration and tour of British Columbia and Banff, Alberta, with our 25th Anniversary program and to have now received this great honour. To be recognized at this level by the arts community in British Columbia is truly overwhelming and incredibly special, as it recognizes the years of successful partnerships with British Columbia's theatre presenters. Our company has toured British Columbia regularly for over 20 years and we most definitely consider this province to be our second home. We look forward to continuing our west coast presentations for years to come. We also look forward to touring “BEST OF MOTUS O ~ 25th Anniversary Tour” to other provinces across Canada and internationally”.



Motus O Dance Theatre minus Co-Artistic Director James Croker, who is taking the picture.



Picture taken during the performance of *IMTA* (photo credit: James Croker).

There are even talks of an *IMTA 2*, in which Thierry Chopin would be the narrator while Motus O would perform its choreographic interpretation around him, in a fashion similar to how “[Prisoner of Tehran - A memoir](#)” was developed in collaboration between Motus O and Marina Nemat. However, the project is having a hard time finding funding support due to its interdisciplinary nature that sits between the traditional scientific and artistic silos. IMTA already transcends environmental, economic and societal boundaries; adding a cultural element makes the situation even more intricate, which is what real life situations are about. Therefore, it would be a wonderful, if unconventional, way to spread the message, as people are trying to develop the best and innovative food production systems for the future. If you are aware of a funding opportunity, or mechanism, to support this kind of project, please, let us know.

Read the article: [Motus O Dance Theatre arrives at Capitol](#)



Treena Hein wrote an interesting article entitled “[Sea superfood](#)” published, and featured on the cover, in the April 2016 issue of *Food in Canada*. In it, Treena wrote that Canada and other western countries have been slow to realize the benefits of seaweeds, but that this is now changing. Despite having been consumed for centuries, especially in Asia, seaweeds are now finally being touted as a new superfood in North America.

In the article, **Thierry Chopin**, cited several times, asks “How do we go beyond these stories that pop up every six months in the press about seaweeds being the next superfood?” to making it a reality. We believe that public education and aquaculture diversification will be key.

Read the article: [Sea superfood](#)



YouTube remains a very efficient dissemination platform for the IMTA concept and the principles it is based on.



On April 28, 2016, the [IMTA Canada YouTube channel](#) reached 75,020 views with 11 videos being posted.

A comparison with the situation on October 30, 2014, when IMTA Canada recorded 50,000 views (see table below), shows that the top videos at the “IMTA box office” remain **Seaweeds - A part of everyday life** (30,790 views; 41%) and **Filter feeders** (25,730 views; 34%).

The videos have been watched in 20 more countries and territories (197). The top 3 countries remain the USA, Canada and the United Kingdom.

In terms of demographics, our audience is made of around 69% males and 31% females. The female audience is younger (67.7% of the females are between 13 and 34 years old, versus 56.6% of the males for the same age bracket). There is a strong cohort of males 55-64 years old (19.5%), whereas there is only 5.75% of the females in that age bracket.

The top playback locations remain YouTube watch pages (84%), embedded players on other websites (11.8%), mobile devices (3.8%) and others (0.4%).

The top traffic sources remain YouTube search (31%), direct or unknown (20%), suggested video (20%) and others (29%).

Date	30 October 2014	28 April 2016
Number of views	50,000	75,020
Number of videos	11	11
Top 2 videos		
Seaweeds - A part of everyday life	36% views (18,171) 49% watch time	41% views (30,790) 52% watch time
Filter feeders	33% views (16,629) 37% watch time	34% views (25,730) 37% watch time
Number of countries and territories reached	177	197
Top 3 countries		
USA (views/watch time)	31% / 39%	33% / 39%
Canada (views/watch time)	22% / 9.5%	19% / 8.6%
United Kingdom (views/watch time)	5% / 5.9%	4.8% / 5.3%
Demographics		
Males	70%	68%
Females	30%	32%
13-17 years	2.6% M / 6.6% F	2.6% M / 6.6% F
18-24 years	23.9% M / 31.1% F	21.1% M / 30.0% F
25-34 years	26.9% M / 31.1% F	36.1% M / 30.0% F
35-44 years	12.9% M / 16.1% F	13.1% M / 17.0% F
45-54 years	8.3% M / 7.5% F	8.5% M / 8.6% F
55-64 years	22.9% M / 5.6% F	16.1% M / 5.9% F
65+ years	2.5% M / 2.0% F	2.5% M / 1.9% F
Playback locations		
YouTube	80%	84%
Embedded players on other websites	10%	11.8%
Mobile devices	8.3%	3.8%
Others	1.7%	0.4%
Traffic sources		
YouTube search	32%	31%
Direct or unknown	26%	20%
Suggested video	16%	20%
Others	26%	29%



Renée Cho, staff blogger at the Earth Institute at Columbia University and freelance environmental writer for *E Magazine* and *On Earth Magazine*.

Renée Cho wrote an interesting article entitled “**Making fish farming more sustainable**” published in *State of the Planet, Earth Institute of Columbia University* on April 13, 2016. In her article, Renée indicates several solutions for aquaculture to become more sustainable; one of them is IMTA and she cites the work done in New Brunswick.

Renée already wrote about IMTA in her article “[The seaweed and shellfish solution](#)”, published in the September/October 2011 issue of *E Magazine*.

Read the article: [Making fish farming more sustainable](#)



Isabelle Tremblay giving her presentation at the Seaweed Cultivation Networking Workshop, held on April 20, 2016, in Halifax (photo credit: Blaise Thériault).

On April 20, in Halifax, Nova Scotia, approximately 25 people met for a **Seaweed Cultivation Networking Workshop** organized by **Peter Sykes** (Aquaculture Association of Nova Scotia) and **Isabelle Tremblay** (postdoctoral fellow with **Thierry Chopin** and **Neil Ross** (Ross Scinergy Inc.) and working with **Bill and Stanley Oyster Company**). The purpose of the workshop, held at Dalhousie University, was to network among people sharing a common interest in seeing the development of seaweed aquaculture in Nova Scotia, in association with shellfish aquaculture.

There were six presentations:

- **Isabelle Tremblay** talked about her work on oysters and seaweeds with Bill and Stanley Oyster Company.
- **Thierry Chopin** gave a presentation entitled “Seaweed aquaculture in Nova Scotia: Yes! But within an IMTA approach, an enabling regulatory framework and some coordination”.
- **John Sewuster** described what his company, **Waypoint Business Solutions**, could bring to the table.
- **Scott Samson** explained the interest of **Louisbourg Seafoods** in cultivating seaweeds.
- **Eric Albert** described **Perennia**, a fully integrated agri-food and bio-resource company offering services in extension, food safety, product development and facilities in Bible Hill (Truro), Nova Scotia.
- **Jeremy Boudreau** described what his company, **Maritime Rockweed**, is doing and planning to do.



This was followed by a discussion period, which was extended at the Dalhousie University Club over food and beverage.

There was a desire to continue the networking efforts during Aquaculture Canada 2016, the conference of the Aquaculture Association of Canada in September 2016, in St. John's, Newfoundland, and a subsequent workshop to be arranged for later in the fall.



The **Marine Stewardship Council (MSC)** and the **Aquaculture Stewardship Council (ASC)** are setting a **joint global standard for seaweeds**.



The headquarters of the Marine Stewardship Council in London, UK (photo credit: Thierry Chopin).

The MSC and the ASC are working together to create a joint global standard for certifying seaweed operations and have launched a public consultation on the Seaweed Standard. This standard will contribute to the health of the world's aquatic ecosystems by promoting environmentally sustainable and socially responsible uses of seaweed resources. With seaweed production increasing alongside demand for certification, the MSC and ASC say that they recognize the importance of having a global standard

that rewards environmentally sustainable and socially responsible seaweed production, and provides a benchmark for improvement.



David Agnew, Science and Standards Director of the MSC, said “The Seaweed Standard will demonstrate mutual sustainability principles and standard systems, referencing best available scientific understanding and industry practices that conform to international norms of good conduct, including FAO Guidelines for Ecolabelling and ISEAL Codes of Good Practices”. The standard will allow for certification of both wild harvest and farmed seaweeds, regardless of the scale or location of the operation.

Thierry Chopin and Alejandro Buschmann (Universidad de Los Lagos, Puerto Montt, Chile) have been working on the development of the standard since 2015, as international experts for the MSC and ASC.

From March 1 to April 30, 2016, interested parties were invited to view the proposed Seaweed Standard and certification process, and share their expertise and feedback through an online consultation process. These comments will be useful for refining the standard.



Thierry Chopin and Alejandro Buschmann during a working session in May 2015 with the Marine Stewardship Council and the Aquaculture Stewardship Council in London, UK (photo credit: Marine Stewardship Council).



Adrian Hamer enjoying a much needed vacation in Cape Breton, Nova Scotia (photo credit: Jill Hamer).

Adrian Hamer was born and raised in New Brunswick and obtained his BSc in Environmental Biology from the University of New Brunswick Saint John campus (UNBSJ). In 2010, Adrian began working with CIMTAN as a summer student, as a result of his Honours thesis work with the orange-footed sea cucumber (*Cucumaria frondosa*). Through his work with **Bruce MacDonald** at UNBSJ, Adrian met **Shawn Robinson** and later went to work with him as a technician at the St. Andrews Biological Station (SABS) of Fisheries and Oceans Canada. After 2 years at SABS, Adrian became the Network Manager of CIMTAN in June 2012.

Having worked as a laboratory technician in academia and government, moving into the position of Network Manager was quite an adjustment but has provided Adrian with a well-rounded perspective on how NSERC Strategic Networks function, as well as a broader view on how academia, industry and regulators interact. Working with so many people, from



university researchers to government officials, from summer students to industry representatives has been an invaluable experience.

As CIMTAN Network Manager, Adrian is responsible for much of the day to day management of the Network which, consequently, means spending a lot of time behind a desk. Luckily, working with **Thierry Chopin** (CIMTAN Scientific Director and leader of two of the sixteen projects of CIMTAN) is never dull. From collecting seaweeds on the shores of southwestern New Brunswick to waking up at 5:00 am to deliver kelp twines to Back Bay dock, to writing reports and formatting *CIMTAN Snippets*, Thierry makes sure that there is plenty of variety in Adrian's day to day work!

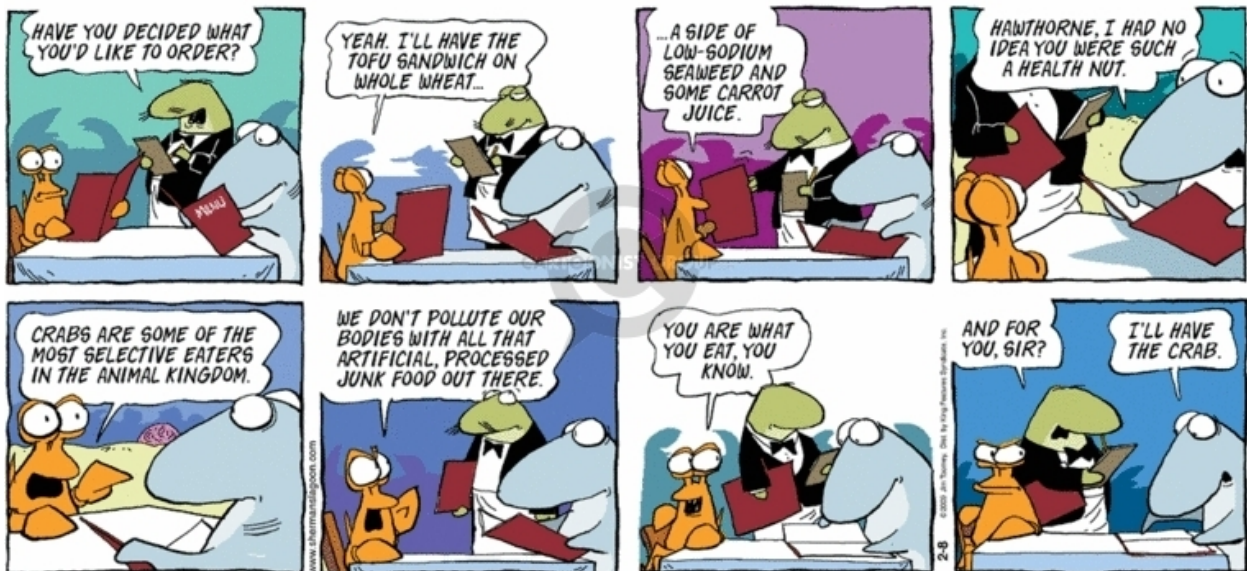


Adrian Hamer carrying bags of kelps after a collecting trip in August 2015 (photo credit: Thierry Chopin).

CIMTAN member quote of the month: “Being at the intersection of science, industry and regulators has given me a much greater appreciation for how some larger issues facing society and the environment can be addressed. The solutions are seldom clear or easy to implement, and require champions in different sectors to continue to push for change” (*CIMTAN Network Manager Adrian Hamer*).

SHERMAN'S LAGOON

BY JIM TOOMEY



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