

Report on the BLOOM cleantech cluster meetings and training for Barbadian experts in Austria, Sweden and Denmark from 6th to 8th September 2022

Since 2018, the United Nations Industrial Development Organization (UNIDO), with funding from the Global Environment Facility (GEF), is implementing the project “Strategic platform to promote sustainable energy technology innovation, industrial development and entrepreneurship” in Barbados, a small island developing state (SIDS) in the Caribbean.

The project established BLOOM, the first cleantech cluster within the Caribbean Community. It is hosted by Export Barbados (BIDC) under the supervision of the Ministry of Industry, Innovation, Science and Technology (MIIST). UNIDO is providing technical assistance for the establishment of the cluster model and management, its service packages, international partnerships and fund raising. It is envisaged that BLOOM reaches sustainability and continues to operate beyond project closure.

Created as public-private partnership, the cluster hub provides shared resources and services, as well as a makerspace for companies and academia to work on joint projects, solutions and marketing. BLOOM contributes to the efforts of the Government of Barbados to tackle the severe impacts the COVID-19 health and fiscal crisis, recent oil price escalations, as well as growing climate change adaptation costs. By strengthening local cleantech entrepreneurship and innovation, the cluster contributes to economic diversification towards emerging sectors of the green and blue economy, decoupling from fossil fuel imports and reduction of environmental externalities.

Barbados has not only ambitious plans to become the first carbon free small island developing state by 2030, it intends also to become an export leader of cleantech products and services to the Caribbean and beyond. The sector includes a broad range of island relevant products, services and business models, including renewable energy, energy and resource efficiency, waste disposal, treatment and recycling, as well as circular economy.

After four years of implementation, the BLOOM is currently fully handed over to the recruited local management team at BIDC. To further strengthen the capacities of the local cluster management and key stakeholders, UNIDO organized international expert meetings and training in Austria, Denmark and Sweden between 6th and 10th September 2022. The varied program introduced the participants to best management practice and lessons learned of European cleantech clusters, as well as to latest technology innovations with relevance for the Caribbean. A total of 12 representatives from Barbados consisting of BLOOM cluster staff, government officials and further stakeholders as well as business owners and cluster incubatees took part in the tour.

On Tuesday, it commenced with a presentation of the BLOOM achievements in the context of the 5th Steering Committee of the Global Network of Regional Sustainable Energy Centers (GN-SEC), convened by UNIDO between 5 and 8 September at the Vienna International Centre. The cluster in Barbados has been an important pilot for the wider BLOOM Regional Cluster Program to be rolled out by UNIDO under the GN-SEC in various middle and lower-income countries over the next years.

Mr. Martin Lugmayr, manager of the GEF project and GN-SEC program, expressed his appreciation to the cluster team in Barbados for their achievements and introduced the delegates into the regional BLOOM program. He highlighted the importance of local entrepreneurship and innovation for an “inclusive” climate transition generating green jobs and revenues in developing countries. He pointed out that cleantech clustering has been for a long time a domain of industrialized and emerging countries. However, also middle and lower income countries have a critical mass of young entrepreneurs and innovators, which are ready to cooperate under a joint makerspace, and are keen to tap into value chains of cleantech manufacturing and servicing. He highlighted the opportunities for south-south and triangular cooperation between well-established clean tech clusters and BLOOM newcomers in



Figure 1: Presentation of the Regional BLOOM Cluster Program at the 5th GN-SEC Steering Committee meeting on 6 September

developing countries. He invited the participating regional representatives from the Africa Arab region, Asia Pacific, Latin America and Caribbean to nominate further pilot countries.

Afterwards, Jari Aaltonen, BLOOM Cluster Manager and Terrell Thompson, Life Sciences Coordinator at Export Barbados, presented the ongoing projects and results achieved so far. Subsequently, several Barbadian entrepreneurs and members of the BLOOM cluster explained their business approaches

in the areas of waste recycling and waste to energy, biotech, and solar power to the intrigued other participants of the meeting.

On Wednesday, the delegation from Barbados together with other interested attendees joined a full-day tour to Graz and visited four different facilities. During the morning, *BEST Bioenergy and sustainable technologies* and *HyCentA Research GmbH* specialized on hydrogen solutions gave both a short company overview and then showcased their research facilities and applications on the premises of the TU Graz. After lunch, the tour continued at the *AVL List* facility in order to learn more about *SOLID*, a company focusing on solar thermal energy. From there, the 28-member study group set off for the last

stop for Wednesday, the *Green Tech Cluster Styria*. Here, a short presentation highlighted and explained the cluster organization and work. The excursion ended on the newly built Science Tower with a view over Graz surrounded by the numerous plants of the rooftop garden. At about 7:30 the group arrived in



Figure 2: Group picture in front of AVL headquarters after listening to a presentation of SOLID on 7 September

Vienna on time.

For the delegation from Barbados, Thursday also started early as they headed to Copenhagen and from there on to Helsingborg in Sweden. Upon arrival, the participants visited *RecoLab*, a wastewater to energy facility, and later heard several presentations on urban development in Helsingborg, hydrogen projects in the municipality of Trelleborg, and on the *Sustainable Business Hub*,

another cluster active in southern Sweden. A successful day with a lot of knowledge transfer and networking ended late in the evening after the return trip to Copenhagen.

The next morning brought the delegation from Barbados to the environmental cluster *CLEAN* in Copenhagen. First, there was a training session on cluster management and sustainability, in which COO Henrik Bjørnager Jensen outlined the central structures and processes of a successfully operating cluster. Afterwards, the International Cleantech Network (ICN) was introduced, which is an umbrella cluster organization that includes *CLEAN* but also the previously visited *Sustainable Business Hub* in Malmö and the *Green Tech Cluster Styria*. Besides, the BLOOM cluster had the opportunity to present itself briefly and possible collaborations were explored, contact details were exchanged.

In the afternoon, two more visits followed: on the one hand *Brintbranchen*, the Danish organization for hydrogen and Power-to-X solutions, on the other hand *Amager Bakke*, the most sophisticated waste-to-energy facility in the world. The presentation of the plant and an ensuing guided tour through the location rewarded the participants on their last day with a spectacular view over Copenhagen and the offshore wind farms in the distance. From there, the delegation from Barbados went back to the hotel, and after a dinner together, all participants left for the airport early on Saturday morning.

The four-day expert meetings and training can be seen as a great success in many ways. The intensive program has given the participants a variety of impressions, from technical insights to business and



Figure 3: Visit of Denmark's environmental cluster CLEAN including training session on cluster management as well as networking on 9 September.

managerial approaches on how to sustain the cluster in the upcoming years, to inspiration for new projects. Next to that, it has paved new ways of cooperation with European partners. After the active participation in trainings and many Q&A sessions, the local BLOOM team should be best possible prepared for the next years ahead and have a plan in place once the funding stops.

The visibility of the BLOOM cluster itself, especially of the entrepreneurs, but also of the whole approach was increased considerably within the European cleantech cluster network and the exchange with European partners will be intensified in the future – even a membership in the ICN is up for debate. The concept of BLOOM and the different presentations at the 5th GN-SEC Steering committee meeting were very well received by the other participants and the replication of the model in other countries was recommended.

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Further information:

<https://open.unido.org/projects/BB/projects/>

<https://bloomcluster.com/>

<https://exportbarbados.org/archives/category/bloom>

<https://www.gn-sec.net/content/bloom-regional-program/>

<https://www.unido.org/stories/cleantech-entrepreneurs-driving-green-recovery-b>

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