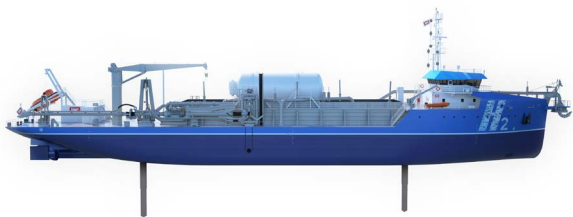


SUSTAINABLE LOCAL DREDGING CAPACITY



West Africa relies on international contractors and an aging fleet for the execution of dredging works. The vessels owned by the local contractors and port authorities are on average well over 30 years old and range amongst the most polluting vessels in operation. The only other alternative is to contract international Dredging Contractors, which means no local employment. We believe dredging required to counter the consequences of climate change can only be executed with the most environmentally friendly equipment operated by locals.



THE LEAF-HOPPER CONCEPT

Royal IHC is a leader in the design and build of trailing suction hopper dredgers. In the research & development program for trailing suction hopper dredgers optimizing cost-efficiency and minimizing environmental impact has been the focus for many years. In 2017 Royal IHC delivered the world's first LNG fuelled trailing suction hopper dredgers. At this moment the concept of Low Energy Adaptive Fuel (LEAF) hoppers is being developed. These dredging vessels are specifically designed for minimal energy consumption and are adaptable to clean types of fuel.

The ultimate goal is to sail, dredge and offload using hydrogen. Hydrogen is (at the moment) still very expensive, but it is expected that the price will decrease in the (near) future due to technical and infrastructural developments. With actual bunker infrastructure in West Africa being set for a general overhaul, we foresee that West Africa can leapfrog into the transition to green fuels. The adaptability of the LEAF-Hopper means that it can be operated using MDO, biodiesel, LNG or hydrogen as the region transitions to greener fuels. Every option has its own contribution to the reduction of CO₂ and other harmful emissions, like SO_x, NO_x and particulate matter. Every option has its own adaptive measures and development.

FINANCED AND OPERATED LOCALLY

A consortium of public private parties invest in the acquisition of new equipment through a Special Purpose Vehicle. This way several Investors such as Operators or Equipment Suppliers can join forces and share the capital investment.

Ports and authorities will then lease the LEAF-hopper for their development or maintenance project, supplying their own (or local) crew. This lease operate model relieves public parties from CAPEX heavy investments and offer an OPEX rate that is more in line with their cash flow.

An additional benefit is the boost for local involvement and local content created this way. Jobs are created, as crews are made available by the ports, authorities or local crewing agencies. Crews will be trained as part of the lease operate model, allowing for local expertise building. IHC Dredging Consultants can play a role in training of management, remote control and supervision of a project and coaching.



**THE TECHNOLOGY
INNOVATOR.**

ROYALIHC.COM