

Considerations for kelp aquaculture on South Africa's west coast: geospatial analysis and research implications

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Abstract:

The commercial use of kelp continues to gain interest worldwide. While in some East Asian countries kelp farming has a long history, the kelp industry in South Africa is based on harvesting of kelp from natural kelp forests or by beach-cast collection. This study examined the potential for kelp aquaculture on South Africa's west coast, focusing on the three indigenous species of kelp, *Ecklonia maxima*, *Laminaria pallida* and *Macrocystis pyrifera*. Geospatial analysis was used to identify and assess nine potentially suitable areas for kelp farming, based on natural habitat conditions, and examination of potential conflicts with other users and enabling land-use factors. An assessment of the market, technical and financial aspects of a kelp farming opportunity indicated that a 4 ha kelp farm, with longlines producing 750 to 1,000 t of fresh kelp per annum, could be viable as an integrated aquaculture activity adjacent to an existing mussel or oyster farm. We recommend a detailed feasibility study for kelp aquaculture in South Africa, with market and technical research, and financial modelling. Current seaweed industry legislation is mostly concerned with the wild resource, and there is a need for specific policies relating to seaweed aquaculture to facilitate growth of the industry.