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Coastal seaweed farming: New model for sustainable livelihood

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DESCRIPTION

Seaweed farming bewildered is becoming an increasingly competitive biomass production candidate for food and related uses. With exponential growth over recent decades, farmed seaweed output reached 24 million tons by 2012. However, just eight Asian nations produced 99% of that while most of the world's 150 countries and territories with coasts were yet to start out seaweed farming. Using current technology, extensively available sea areas could even be cultivated to supply crops that need no freshwater or fertilizers, while providing an expansion of valuable ecosystem services. Following a deductive or principle-based approach that establishes primary production from seaweed biosynthesis as a basis of food production. Global production of farmed aquatic plants, overwhelmingly dominated by seaweeds, grew in output volume from 13.5 million tonnes in 1995 to simply over 30 million tonnes in 2016. As of 2014, seaweed was 27% of all marine aquaculture. Seaweed farming is additionally a carbon negative crop, with a high potential for activity mitigation. Seaweed farming began in Japan as early as 1670 in Tokyo Bay. The nutrients from the river would help the seaweed to grow. The commercial use of seaweed biomass has shifted over the years, from exploiting beach-cast seaweeds as fertilizers and a source of potash, via iodine production, to hydrocolloid extraction. Additionally, further up within the value pyramid one can find functional products like valuable ingredients for food and feed, cosmeceuticals, nutraceuticals, pharmaceuticals, and bioenergy as an occasional value but very high volume application. As these different applications is complementary, different processing options, including holistic approaches, are developed. The holistic 'biorefinery approach' sequentially extracts the foremost valuable components from algal biomass, leaving the rest unadulterated for commodity purposes, i.e. food, feed, fertilizer and fuel, while minimizing waste and environmental impacts of the tactic. Global concern has been rising regarding the impact of world process on seaweed abundance, distribution and quality. While kelps seem to possess a selected degree of resilience to global activity, biomass availability can vary on a small amount.

It is therefore relevant and timely to develop alternative production strategies. during this review, we analyses current exploitation and aquaculture activities, including some economic trends within the usage of seaweeds, as a action at law for the event of those strategies. There has been considerable attention to how large-scale seaweed cultivation within the open ocean can act as a way of carbon sequestration to mitigate global temperature change. quite educational studies have demonstrated that near shore seaweed forests constitute a source of blue carbon, as seaweed detritus is carried by wave currents into the center and deep ocean thereby sequestering carbon. Moreover, nothing on earth sequesters carbon faster than macrocystis pyrifera (also called giant kelp) which could age to 60m long and as rapidly as 50 cm daily in ideal conditions. It's therefore been suggested that growing seaweeds at scale can have an unlimited impact on global process. to stay with one study, covering 9% of the world's oceans with kelp forests "could produce sufficient biome thane to interchange all of today's needs in fuel energy, while removing 53 billion many CO_2 each year from the atmosphere, restoring pre-industrial levels". Subsidizing farmers, either directly or indirectly through tax abatement, for farms credited as blue carbon seaweed farms may further increase engagement with this strategy. While the contribution of seaweed aquaculture to action mitigation and adaptation will remain globally modest, it's visiting be substantial in developing coastal nations and may provide add-on value to the societal benefits derived from seaweed aquaculture.