Research Review

Underwater wheat with high biodiversity. A new crop in 2100 when sea level has risen?

Seagrass meadows are underwater ecosystems hosting a wealth of biodiversity and providing important ecosystem services like coastal protection and water purification. But some of them can also produce valuable crops. Over centuries, Mexican Indians use the seeds of the seagrass *Zostera marina* (eelgrass), to bake their daily bread. Recently, the seeds are discovered in haute cuisine in Spain. This seagrass species occurs all over the northern hemisphere, so it could become an important new grain in areas that become flooded following sea level rise. The review compiles literature on seed production and nutritional characteristics of this seagrass species. Potential areas could be assessed, for example the Dutch areas with high flooding risk, to make a back-of-the-envelope calculation for the amount of food that can be produced in The Netherlands in 2100 if these areas were to be used for the culture of seagrass. Subsequently, this can be compared with other food crops produced in The Netherlands. The concept can be extrapolated to other countries, within Europe but also US, Canada, China, Korea, Japan. A 'challenges list' may be produced. Alternatively, or in addition, it can be chosen to expand the topic to secundary productivity: unlike terrestrial crops, a seagrass ecosystem attracts and raises a lot of faunal species that do not eat the seagrass itself but just uses the protection and substrate it provides. Therefore, a potential 'by-catch' of the seagrass crop harves may occur, that could be used as fish food, or in some cases for human consumption (e.g. eel?).

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