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LINNEA NORDIN 25TH APRIL 2023

## **Reducing Methane Emissions through use of Bio-Technology/ Bacteria/Red Algae**

A global rush to reduce cow burps -  
Latest research and conclusions

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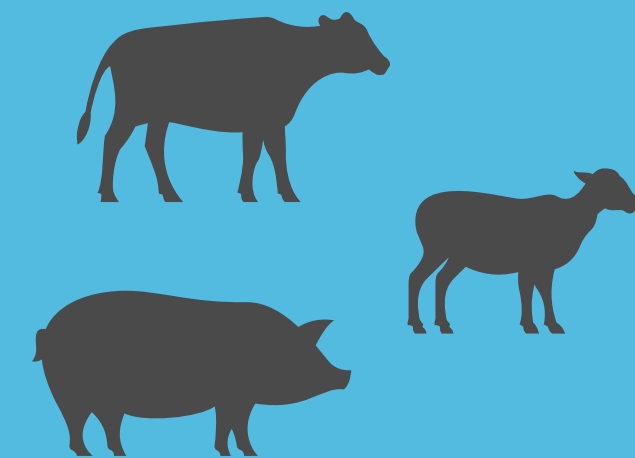
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# Worldwide Methane Emissions

Fossil Fuels 50%



Livestock, human food streams 50%



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# Why?

- Methane large contributor global warming due to greenhouse gases warming the planet
- Methane is produced naturally by itself and by human activity
- We see the negative impacts of global warming through glaciers melting, sea level rising and biodiversity loss and more
- Methane is known to affect the ozone layer 30 times the effect of carbon dioxide and its increasing rapidly
- 1 Cow emits 500 Litres of Methane per day. Currently approximately 1.5 billions cows on earth.



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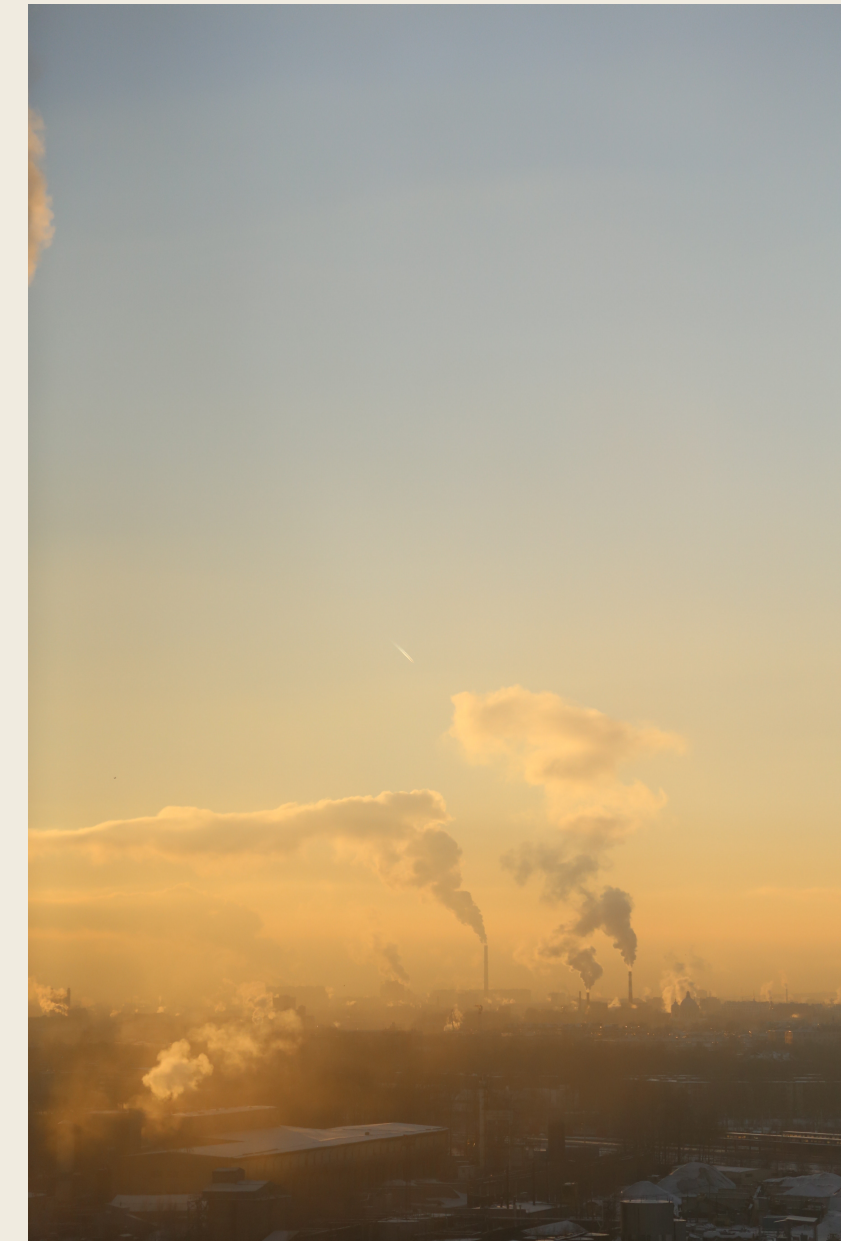
# What do these 3 photos result in?



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60-98% reduction in Methane  
emission from livestock

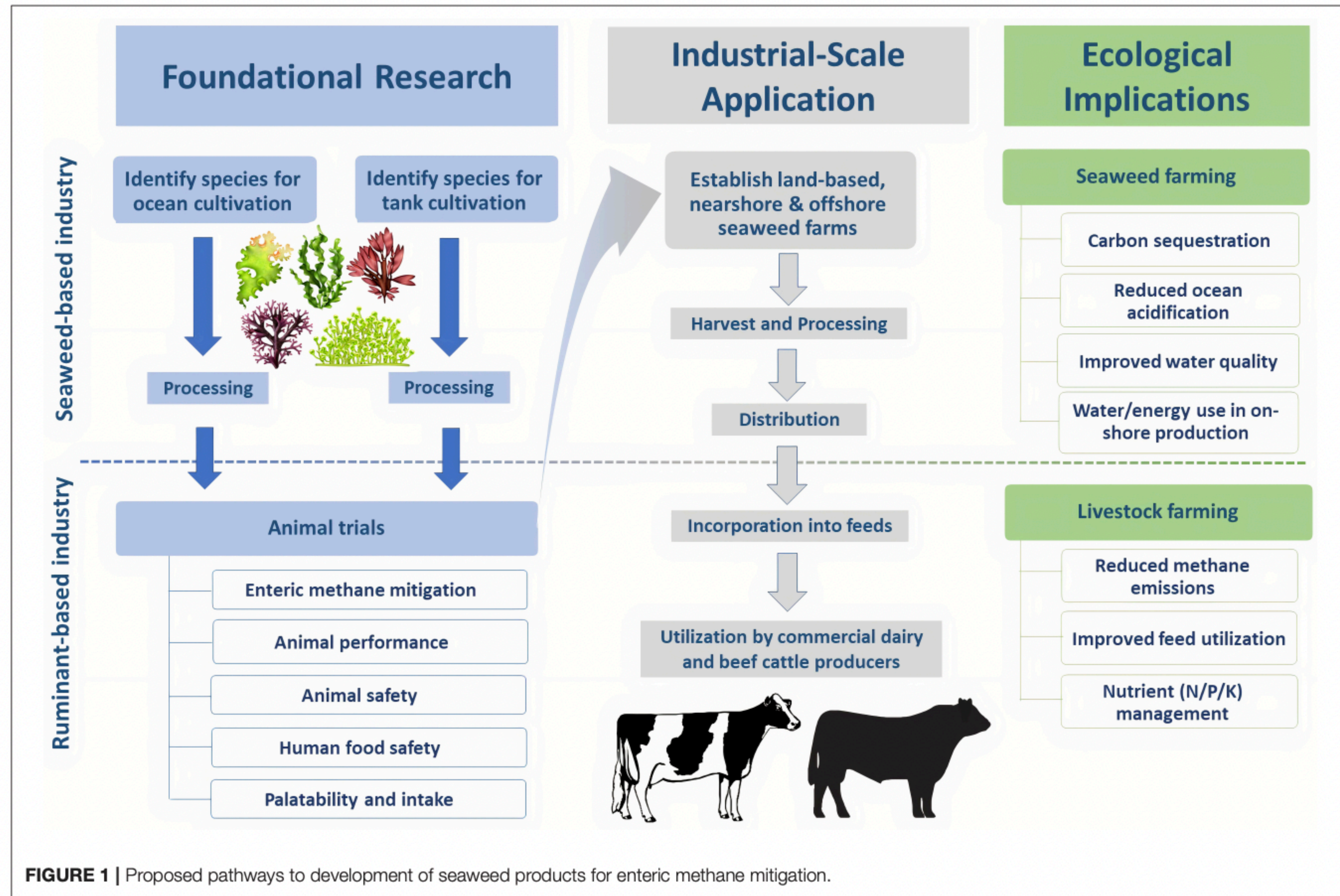
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# How does it work?

- Enteric Fermentation - The process when an animal eats plants (grass) and harvest its energy from that
- Small amounts of macro algae red, brown, green, supplementation in the food reduces the methane production between 60-98% (varying depending on amount given, quality of the algae etc.)
- The efficiency has to do with a compound called Bromoform that works as an inhibitor for the methane production when the fermentation happens in the livestock's body
- Also good minerals and omega 3 in the algae contributing to healthier cows overall





**FIGURE 1 |** Proposed pathways to development of seaweed products for enteric methane mitigation.

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# Future prospects

- We know veganism is one of the many solutions to reduce emissions and individual footprints but not affordable for everyone, livestock for food production and livelihood will be the mainstream for the majority of people, therefore a solution like this is a stepping stone in the right direction
- Lack of incentives, no clear GHE regulations
- Cost Effective solution





### Sources

Nassir Abdul Hussein Al-Hindawi and Lewis R. Brown, 2019. The Use of Methane Utilizing Bacteria in Reducing Global Warming. *Journal of Engineering and Applied Sciences*, 14: 9482-9490.

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Imagery: [pexels.com](https://www.pexels.com)