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Leveraging Seaweed
to lower emissions and increase competitiveness of Agri-Food systems

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The Opportunity

One of the world's richest coastlines almost entirely untapped

Chile	Peru	Ecuador
US$ 222M exports More than 73,000 direct jobs	20k tons/year (up to 50k in the past) 97% exported raw	Nascent cultivation community-based

The gap between potential and reality:

✗ Chile: 95% of 202 processing plants export only dry & bale raw seaweed

✗ Peru: fragmented artisanal sector, illegal extraction depletes beds

✗ Ecuador: single product, single buyer. systemic fragility

✓ Chile: Huge cultivation potential (largely unrealized)

✓ Peru: Transition to cultivation clusters + processing hubs (Korean model)

✓ Ecuador: Kappaphycus used for biofertilizers production. Tests on Asparagopsis

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Korea: The Global Benchmark

Korea built a 1.73 million-ton seaweed industry, exported to 124 countries. That is the roadmap.

	Korea Today	Andes Today
Annual production	+95% is cultivated	3% or les is cultivated
Export reach	124 countries	Primarily China
Processing	Nutraceuticals, bioplastics, K-Food	95% raw drying/baling
Policy framework	Dynamic, updated every decade	Outdated (Chile: last 2003)
Cooperatives	Strong NFFC — national scale	Fragmented, low bargaining power

KMI · KOTRA – Embassies of Korea in Chile, Perú and Ecuador — institutional partners guiding every step

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What the KGGTF Grant Is Delivering

Three interconnected workstreams. One goal: green, inclusive, competitive seaweed sectors

01

Value Chain Analysis

Comprehensive diagnosis of Chile, Peru & Ecuador — from biomass to final markets.

Regulatory, technical, commercial & institutional gaps identified.

02

Knowledge Exchange with Korea

Structured mission to KMI, Chosun University, Wando Producers (May 2026).

Korean solutions mapped directly to Andean bottlenecks.

03

Strategic Roadmaps & Pilots

Country-specific action plans

Pilot study on seaweed feed additive to cut methane in Ecuadorian cattle.

Implementing partner: Fundación Chile | Funded by: Korea Green Growth Trust Fund (KGGTF) | Countries: Chile · Peru · Ecuador

Key Findings: Three Countries, One Story

Massive potential held back by raw exports, fragmentation & outdated regulation

CHILE

Sleeping Giant

1) 73,000 direct jobs, US$222M exports

2) 202 plants. 95% only dry & bale

3) Cultivation potential when linked with sectors such as salmon

4) Priorities: Biostimulants, animal nutrition, increased cultivation, diversification.

PERU

Volume Without Value

1) 20–30K tons/year wild harvest

2) 96% exported raw to China

3) Illegal extraction depleting beds

4) Priority: Cultivation clusters + processing hubs, market diversification.

ECUADOR

Nascent but Promising

1) Community Kappaphycus cultivation

2) Seaweed technically validated for biofertilizer

3) Single product, single buyer = fragile value chains

4) Priority: diversify markets, scale up existing initiatives

Innovation in Action

Pioneering methane-reduction pilot. Ecuador

THE CHALLENGE

Livestock is a major GHG source in Ecuador. Enteric methane from cattle remains largely unaddressed.

THE SOLUTION

Asparagopsis taxiformis (red seaweed) contains bromoform, naturally inhibits methanogenesis in cattle rumen.

TARGET OUTCOMES

≥80%

Reduction in enteric methane emissions

≥10%

Increase in weight gain / milk production

WHY THIS CONNECTS TO KOREA

› MAFRA/KAPE pioneered a low carbon livestock certificación in Korea. This pilot is a direct application of that experience

› Creates replicable model for tropical livestock systems in developing countries worldwide

› Builds Ecuadorian technical capacity and opens new market pathways for coastal communities

› Generates first local scientific data, potentially enabling climate finance access

WBG AgriConnect

Ecuador pilot links seaweed smallholders with the livestock industry, a replicable AgriConnect model.

Next step: apply same logic in Chile, connecting seaweed producers with salmon, aquaculture, and agri-food value chains.

Impact: Jobs, Income & the Green Economy

Seaweed sits at the intersection of climate, food, Jobs: Exactly where Korea's model excels

COASTAL COMMUNITIES FIRST

Women collectors & processors

Key role throughout the value chain. Gender-disaggregated data being mapped

Small-scale cultivators

Financial instruments: parametric insurance, blended finance, partial guarantees

Cooperatives

Korean NFFC model: Collective bargaining, shared infrastructure

Integrated Seaweed Centers

Shared drying, quality control & market access designed for rural communities

KGGTF Grant Impact ENV

The KGGTF grant has been **instrumental in maintaining the policy and operational dialogue** with Chile and Peru keeping both countries engaged, informed, and moving toward inclusive seaweed sector development.

KGGTF Grant Impact AGF

The KGGTF grant has allowed us to explore different solutions for the agricultural sector in the Andean Countries, such as feed additives for livestock and salmon, or bioplastics for fruit exporters. **Also, we are drawing lessons from the sector to enhance the work with aquaculture (such as contract aquaculture, and finance for small producers)**

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Korea’s knowledge. World Bank support. Community ownership

By 2030: A thriving, inclusive, climate-smart seaweed industry in the Andes.

Massive Potential

Chile, Peru & Ecuador hold one of the world's richest untapped seaweed coastlines, ready for green growth

Korean Roadmap

From KMI policies to NFFC cooperatives to KIOST blue carbon, Korea's playbook fits the Andes perfectly

Real Impact

More Jobs for women and youth, methane reduction pilots, inclusive finance, translating knowledge into lives and livelihoods

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