



CIRCULAR SOLUTIONS AGAINST A GLOBAL FOOD CRISIS

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WTO, 2022/05/18

RAGN SELL



Ladies and Gentlemen. We originate from 1881 when we where a transport company transporting goods and people with horses, we then brought latrines from the city of Stockholm to the farmlands surrounding the city. In the future we will recirculate nutrients back to the farmlands as part of future more sustainable fertilizers.

No matter where on this planet we come from, we all live with the same laws of physics. There's a finite amount of resources on this planet. However, we are not using the system today as it was made to function, as a cycle.

A large portion of regulations and standards in the world prevents the use of materials that at some point has been defined as waste. This results in an almost 100% linear economy and recirculation in economies of scale is often troublesome.

If we are serious about building a sustainable society, we need to use the resources we already have, over and over again. We need to transform into a circular economy, and it needs to happen fast. Otherwise, we are leaving our problems for future generations to solve. I will give you some examples on trade barriers that exists.

At Ragn-Sells, we are working to speed up this development. Here is an example from our work in Estonia.

<https://www.youtube.com/watch?v=nSbdXENI7qE>

A film presenting Ragn-Sells pioneering project for CO2 recycling in Estonia with the prime minister of Estonia, the president of Estonia and EU commissioner for energy



We are treating the ash and combining it with captured carbon dioxide to form calcium carbonate. The largest flooring company in the EU, the French company Tarkett, can use this recycled calcium carbonate to produce vinyl flooring. They have a strong circular commitment and will make sure that their floors will circulate over and over again. This way, virgin extraction and climate-intensive treatment of limestone is replaced by a material which has a negative CO2 emission factor. www.osaservice.ee/en/
As a result, the collaboration with Tarkett puts the CO2 in a circular loop, away from the atmosphere. The problem we face is that the regulation now being developed seems to only support storage under the seabed, so the project might never be able to off.

[Tarkett and Ragn-Sells join forces to fight climate change](#)
[| Tarkett](#)



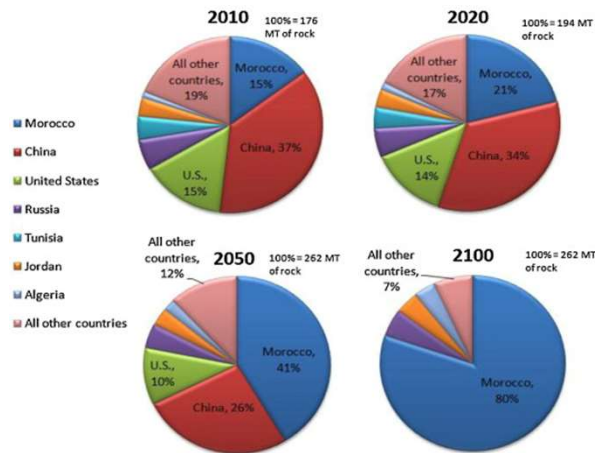
Let's move to the agricultural sector. With rising demand and accelerating climate change, food scarcity is quickly becoming a major driver of civil unrest.

At COP26, I met the former Minister of Environment from Sri Lanka. Sri Lanka decided to go organic and stop the import of fertilizers (as they couldn't source them). In March 2022, the government fell due to civil unrest, as the harvest had been cut in half.

More than 800 million individuals walking on this planet are chronically hungry, according to the UN. In the decade to come hunger will increase due to the lack of nutrients. As always, the developing countries will take the biggest hit.

ICC was founded after the first World War with the conviction to enable free trade of goods to avoid new conflicts. 100 years later we do not fight about goods. Rather, it is the scarcity of resources that risk leading future wars. [The 13 sessions that Ragn-Sells participated at COP 26 was recorded - Inside COP26 \(ragnsells.com\)](#)

SUPPLY OF ROCK PHOSPHATE



RAGN A SELLS

In order to avoid that, we need to produce more fertilizers. The key nutrients, potassium, nitrogen, and phosphorus, need to be available – but our current use of only virgin sources is deeply problematic.

Today, almost all that phosphorus is virgin. As for sourcing, Morocco and Western Sahara will be the only region in the world that can keep up supply by the year 2100, as supplies in China, Russia, Europe and the US will run out if we can't recirculate more.

[The future distribution and production of global phosphate rock reserves – ScienceDirect](#)



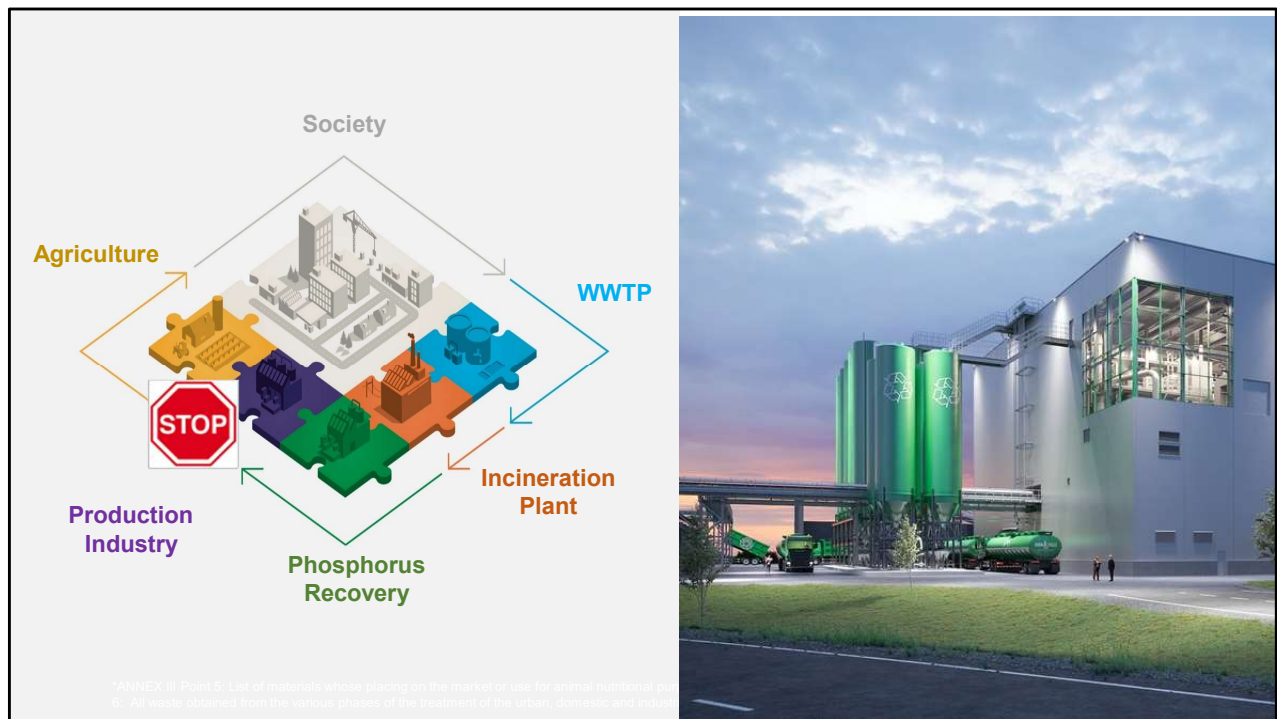
At the same time, we already have the technical solutions to recycle enormous amounts of these nutrients from our waste streams. My company has leading processes for all of them. Up to 50 per cent of the phosphorus demand in Europe can come from recycled sources, but the market is closed. Today zero per cent has a recycled origin of the fertilizers.

[Ash2Phos will be implemented in Germany \(easymining.se\)](https://easymining.se)

Every wastewater treatment plant (WWTP) on the planet could be turned into a resource factory that can supply us with circular phosphorus and nitrogen forever. Ash from waste incineration can be treated and detoxified to give us potassium. But legislation in our linear economy today, does not allow us to produce resources out of WWTP.

In addition, all our processes reduce emissions, detoxify the earth and have the potential to save money for the society at the same time.

[From wastewater treatmentplant to resource plants \(ragnsells.com\)](http://ragnsells.com)



Today, regulation stands squarely in the way of the circular revolution. Using nutrients from waste streams in agriculture is often illegal. This is particularly the case when it comes to organic farming and for animal production, even though the quality and safety of the recycled phosphate we can produce is the best quality the market can offer today. The same problem stops the use of circulated potassium. In the picture we see the first potassium plant in the world, being built by us in collaboration with the Japanese/Swiss company Hitachi Zosen Inova that also has signed a license agreement to use our technique in Japan, China, Australia and 9 other countries in Europe.

[Hitachi Zosen Inova \(easymining.se\)](https://easymining.se/), [Ash2Salt \(easymining.se\)](https://easymining.se/)

In the EU, the Commission needs to rethink its outdated regulation on organic farming and animal feed. The same goes for other WTO member states. But on a more basic level, we need to rethink how we look at waste. We need to unleash the endless possibilities of viewing waste as a resource

that can be used, over and over again.



If we modernize all regulatory frameworks, using circular principles as the starting point, we can tackle some of the most pressing problems facing humanity.

Aside from fighting climate change and food scarcity, we can create new market opportunities where future generations can secure their livelihoods and thrive in a smarter and more sustainable way than we ever did, and you in WTO can be the merchants for peace we need. Be the first supporters that enable circular material flows.

It takes guts. It takes brains. But most of all – it takes action.