

Green in Future: Interview with Dennis Ng, Director and co-founder of Kinross Pte Ltd

Healthy soils are the foundation of resilient food systems, thriving ecosystems, and sustainable communities. Yet, as global challenges such as climate change, land degradation, and geopolitical disruptions continue to threaten food security, the importance of regenerating our soils has never been greater. At Green Pulse, we spoke with Dennis Ng, Director and Co-founder of Kinross Pte Ltd, who shares how soil microbiomes, regenerative agriculture, and organic solutions are helping restore soil health while strengthening food, energy, and nutrition security for the future

May we know what is your background and how you became involved with Sustainability?

My early career was in banking and then fund management, which was investing into late-stage private equity. Towards the end of 2022, I was approached to evaluate a company that had a track record and success in soil regeneration. This started my journey to understand more about food resilience and sustainability.

Could you elaborate more about what soil regeneration has to do with sustainability?

Dennis: As an investor in private equity, I look for macro themes and companies that could benefit from macro trends. When I evaluated what soil regeneration was about, it led to my conclusion that it was there was strong links to sustainability in food security, energy security and health improvement. All these three areas are of global interest, which led me to continue to do an in-depth research and to understand how healthy soil leads to sustainable food, energy and health. Healthy soil is akin to a healthy gut. They are basically the same idea, just in different places and both run on microbes. In the case of a healthy soil, a good soil microbiome has bacteria, fungi, protozoa, nematodes all doing different jobs. Their diversity leads to the soil being able to handle drought, disease, or poor nutrients without collapsing. Beneficial microbes like Mycorrhizal fungi and Rhizobia help plants take up nutrients and fight pathogens. If pathogens take over, you get root rot which causes disease in the plants, for example, Fusarium in the Cavendish banana industry and Ganoderma in the Oil palm industry. In the case of a healthy gut, a diverse gut microbiome with many bacterial strains is linked to better immunity, digestion, and mental health. A low diversity in the gut microbiome is tied to inflammation, IBS, and various allergies. Beneficial bacteria in the gut like Bifidobacterium and Lactobacillus help digest fiber, make vitamins, and keep pathogens in check.

What does Kinross do for soil regeneration?

Kinross has its own proprietary colony of beneficial microbes that aid in the production of a Superior organic fertilizer. Organic fertilizer is produced from waste resources combining both carbon sources (plant waste) and nitrogen sources (animal waste). It undergoes a composting process over a time period of about sixty days and during this process, heat is produced which kills off harmful bacteria like salmonella and E. coli. The addition of our beneficial microbes during the composting process speeds up the process as well as produce Humus. Humus is the stable, dark, organic matter left over after microbes break down plant and animal residues. Humus has good water holding capacity as it is sponge-like and holds up to 20 x its weight in water, so soil stays moist longer. It also has a high CEC (Cation Exchange Capacity). It holds onto calcium (Ca), magnesium (Mg), potassium (K), nitrogen (N) and releases them slowly to plant roots. Humus acts like a glue and binds mineral particles into stable aggregates which lead to better aeration, drainage and less compaction of the soil. It also acts as a slow-release food for beneficial bacteria and fungi, which keeps the whole soil food web active. Last but not least is that Humus helps buffer soil pH and detoxifies some pollutants. With Kinross's microbes, the organic fertilizer we produce contains a high concentration of Humus which is a fully decomposed and stable end product that can last decades in the soil. Our laboratory tests indicate a range of Humic Acid between 11-18% depending on the raw ingredients used. Normal composts has Humic Acid usually in the single digits or none at all if it is not composted well.

What has been your experience in promoting soil regeneration?

It has been a challenging task as industrial farming practices from the 1940s with chemical fertilizers to produce greater yields is a mindset that is hard to change amongst farmers. However, I am grateful for doing my part to promote regenerative agriculture which uses less or no chemical fertilizers and thus protecting the soil microbiome which leads to healthy soil.

Over the past three years, I have seen more organizations promoting regenerative agriculture and the use of carbon credits to subsidize farmers who are afraid of an initial loss in yield of their crops by switching from chemical to organic fertilizers. When you compare organic fertilizers to chemical fertilizers, there is some similarities in how Chinese medicines and western medicines are used. Chinese medicines treat the underlying cause of the problem but could take more time. Whereas western medicine which provides an immediate relief that could mask the underlying problem. So organic fertilizers are like Chinese medicine by solving the underlying problem, which is the quality and health of the soil. Chemical fertilizers don't treat the underlying problem of plant health which is related to the health of the soil but provide a quick fix to bring up the yield of the plants without taking into account the harmful effects on the soil. As farmers are always concerned with their returns on their hard labour, they have been conditioned to use chemical fertilizers. However, the war between Iran and America controversially has benefitted the use of organic fertilizers. This is because Urea which is commonly used as the feedstock for production of chemical fertilizers are in short supply due to the closure of the Straits of Hormuz. Countries are now waking up to the fact that without fertilizers, farmers will not be able to grow crops which harm the food security of a country. Governments are now realizing that the waste of the land can be productively used as organic fertilizer, and which is a much needed and healthier alternative to chemical fertilizers. China even has a mandate to ensure that the percentage use of organic fertilizers are increased yearly to mitigate the damage to their agriculture land.

What more can be done to promote sustainability in the area of soil health?

We need more people to understand that good soil without the use of chemicals like pesticides produce good and untainted food. Much of the food that we eat when tainted with pesticides affect our health. What we may have also missed is that food tainted with pesticides do end up being eaten by animals like chicken, pigs, cattle and sheep in industrialized animal farming.

Animals eating highly chemically tainted feed ends up being unhealthy and when we consume such unhealthy animals, our health is also affected. One of our early Advisors was Professor R. Montgomery who has written a book titled "What your Food Ate" and gives a good insight into how the large overuse of pesticides have been correlated to the incidences of chronic illnesses. The study found that the Omega 3 and Omega 6 balance of animals has been distorted through the use of pesticides laden animal feed. If you read the book you will see that it ties in with what I earlier mentioned about food security and health. In summary, good soil produces good food that leads to good health.

It seems you are very passionate about sustainability especially in promoting good soil. How does it tie in to energy security?

Dennis: The world is now more focused on circularity and sustainability especially as the source of fossil fuel can be a threat to a country's survivability. There are much being done all over the world to turn crops into biofuels as a source of energy. According to the United Nations, up to 40% of the world's soil has been degraded. My contribution to this problem is to educate more people on the use of organic inputs to regenerate these degraded soils. Once they are regenerated, the soil can be used not only for food purposes but for crops that can be harvested for biofuels. More availability of land will lead to more productive usage of the land for food and energy.

During the past few years, which countries has your efforts been focused on?

We do look upon China as the biggest market for us and hence we have the production of microbes in China. Besides China, we have now established a presence in Mongolia, Cambodia and Malaysia. We are currently also building a presence in Indonesia as well as the Philippines. Recently, we were also contacted by Malawi who has informed us that they have difficulties in procuring chemical fertilizers because of the shortage and price. They are now very keen to use their natural waste resources to produce organic fertilizers.

Thank you for your time and we wish you all the success in your mission of soil regeneration around the world.

We appreciate your time and we look forward to doing our part to regenerate soil and ensuring good food can be secured at all times. Thank you.