REGENERATIVE AGRICULTURE OR SUSTAINABLE FOOD SYSTEM – *WHAT'S THE DIFFERENCE?*

Really, not much! The terms regenerative and sustainable can virtually be used interchangeably. They are both frequently defined as integrated production systems that:

- Produce food
- Enhance environmental quality
- Minimise use of non-renewable resources
- Integrate natural cycles and biological controls
- Promote the health and wellbeing of both farmers and communities

Views differ as to exactly what is meant by regenerative or sustainable agriculture. It may be argued that "sustainable" implies little or no change in the farming environment, whereas "regenerative" is focussed on improvement, but in reality the terms mean much the same.

Whether regenerative or sustainable, there are many different approaches. These may be characterised as "ecocentric" or "technocentric".

The ecocentric approach

This system involves little or no external inputs – including artificial fertilisers and pesticides. It is often championed by believers in organic / biodynamic production systems.

Adoption of this approach would inevitably create radical changes. To give an extreme example, in April

2021 the government of Sri Lanka banned importation and use of all synthetic fertilisers and pesticides. The stated aim was to improve both human and environmental health. The country's two million farmers, who had previously relied heavily on chemical inputs, were ordered to go organic.

Within six months rice production fell 20%. The cost of vegetables rose 5-fold and food scarcity developed. Combined with the collapse of tourism, this has resulted in fuel shorages, millions plunged into poverty and billions wiped from the economy. Although the ban has been reversed, the value of the rupee has halved, and farmers are struggling to purchase the inputs they need.

The technocentric approach

Technocentric approaches rely on modifying existing farming systems, with sustainability a goal to be reached through biotechnology and innovation. Sustainable systems can potentially use robotics, precision agriculture, soft chemistry, genetic modification, and many other new technologies.

Sustainability is hard to measure. Soil conservation and health are clearly key, with carbon capture sometimes used as a metric of success. However, the characteristics of sustainable soil management, and how much agriculture should contribute to biodiversity, remain unclear.

Key practices associated with regenerative/sustainable agriculture (Figure 1, p8) include:

- Reduce tillage and control traffic
- Keep the soil covered with mulch or cover crops
- Maintain living roots in soil
- Build soil carbon
- Reduce reliance on chemical fertilisers and pesticides
- Increase diversity through crop rotations, multi-species cover crops and long-term plantings
- Integrate livestock
- Improve water infiltration through maintaining good soil structure

Whether called regenerative agriculture, a sustainable food system or carbon farming, the outcome can be a win for both the grower and environment.