Nethergill Associates Thematics

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The "Goldilock's Zone" in Farming



The conditions that allow life on Earth, as we know it, are often described by astro-physicists as the Goldilock's Zone. Our planet has to be a certain size; in orbit at the right distance around a star of the right size; in a zone where chemistry works (as opposed to nuclear phenomena only); and at a time when evolutionary processes have had long enough for life forms to develop. It is a stable point (on geological timescales) and it has been *optimised just for us*.

There is, by analogy, a similar phenomenon and a similar Goldilock's Zone in farming.

Let's suppose you:

- Farm 150 hectares of lowland pasture with mixed livestock
- Are a generational farmer
- Work alone, putting-in 50-80 hours a week depending on the season
- Sell to the auction market or an abattoir

Your pre-support revenues will be around £100,000 and your support payments will be £40,000-£50,000. Even so, a conventional farm business model means that you still struggle to be profitable. Conventional wisdom says the way to resolve this is to produce more but that never quite seems to work.

Paradoxically, producing more will typically involve purchasing high-cost branded goods as inputs, such as fertilisers and feed concentrates, just to produce more of a low value commodity item. You will produce more by forcing it in this way but your business is being squeezed by high input costs and low output values. To make matters worse this business imperative compromises the integrity of Nature and the managed landscape through the release of surplus chemicals.

This has all happened because agricultural economists have never embraced the laws of physics as it applies to energy, and food, as a fuel, is a form of energy. Food products can never recover fully the industrial energy content of any inputs used in its production, either in sterling value or in calorific content. The same is true of solar energy, too, but it comes as "free-issue" and we can regard the Sun as permanent and inexhaustible for our purposes. As a consequence, farming will perform more competitively when it is a low-input, low-intensive endeavour.

Business success in farming is based ultimately on converting solar energy with the right crop. The British Isles happens to be well-placed to grow grass and grass is a miracle-crop. Unlike cereals it never suffers from nitrogen-deficiency problems; its quality may well deteriorate with bad management but it will still be viable. This will be the primary resource for farming and ruminants will be the best and most efficient converters of this into proteins. Other production may be justified on the grounds of producing, domestically, as much as possible of our wide dietary requirements, but these will be secondary.

Farming will become more viable when:

- Business performance issues are elevated to be on a par with the more satisfying activities of simply farming.
- Farmers realise they are in the energy business, using energy to produce energy in another form.
- Farmers maximise their photo-synthetic take from solar energy and minimize their inputs with an industrial energy content.
- Grass is recognised as a miracle-crop.

The MSO (maximum sustainable output) point on a farm, sometimes referred to as the sweet spot, defines a Goldilock's Zone. It the point where critical factors coincide with mutually-reinforcing advantages. It is the point where:

Farm profitability is *maximized*

- Nature is **optimised** for the prevailing managed landscape
- The industrial energy burden of production is *minimised*
- The natural capital value of the enterprise is *maximised*

What could be better?

