Issues with Rural Subdivision – Facts and Fiction

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Abstract

The objective of the National Policy Statement-Highly Productive Soils (NPS-HPL 2022) was to protect New Zealand's elite soils in order to provide security of food supply and from inappropriate subdivision. Unfortunately, very little research went into the legislation, given that New Zealand is not overly short on highly productive soils, faces no food security threat, that small blocks are not less productive, and that the economic utility of housing, of which there is a shortage in New Zealand, is well in excess of the value of agricultural production. These aspects are discussed in the paper, outlining the weakness of the NPS-HPL.

Key Words: NPS-HPL, productivity, food security

The Issue

The advent of the National Policy Statement-Highly Productive Soils (2022) was an attempt to: *enhance protection for our most productive land, providing security for both our domestic food supply and primary exports,* and *protect highly productive land from "inappropriate subdivision*." (in Partridge, 2022).

The issue is that the legislation offered minimal analysis as to the issues it was endeavouring to address, particularly, not understanding how "productivity" could be measured, introducing the concept of economic viability which was not defined, and restricting the development of housing on highly productive land, creating a dilemma given most of our cities and town are situated on, and surrounded by, highly productive land.

The result to date has been confusion, and a cost of millions of dollars as Councils and (potential) subdividers attempt to decipher it.

Productivity

The Section 32 analysis of the National Policy Statement-Highly Productive Land (NPS-HPL) (MfE, 2022) states that "*The NPS-HPL provides strong policy direction that rural lifestyle development (either through rezoning land or through resource consent applications) should generally be avoided on HPL as this land-use change reduces the availability and potential of HPL to be used for productive purposes*".

This again raises the issue around the productivity of lifestyle blocks, and the confusion around how this is measured. In particular, much of the current measurement on "productivity" is based on economics, where the general approach is that if a block is not economic then it's not productive.

The NPS-HPL relies on this premise, in that Section 3.10 (1) (a) allows rural subdivisions if primary production on said HPL is not economically viable for at least 30 years. The Ministry for the Environment (MfE) didn't define what "economically viable" is, but a definition has

now been promulgated (Journeaux, 2024). Which indicates that the vast majority of small blocks are not economically viable – but are economically sustainable.

A step back is required here, around the definition of "rural lifestyle". Most of the research carried out and cited in this paper relates to "small" blocks of (say) 0.5 – 20 hectares. Sise (2022) and Sanson et al. (2004) talk about land parcels of less than 50ha, with an average size of 4.97hectares. The NPS-HPL Section 32 analysis states "*There has been a sharp increase in rural lifestyle development in recent decades, with 21% of HPL (LUC 1–3) now occupied by land parcels smaller than 40ha that contain a dwelling. On the most highly versatile land (LUC 1–2), 15% of LUC 1 and 10% of LUC 2 land is fragmented into land parcels smaller than 8ha containing a dwelling*". What it doesn't state is that the majority of commercial horticultural properties are <40ha, and a good number are <8ha. Plus, these horticultural properties are (a) highly productive, and (b) generally economically viable.

It could be argued that the term "lifestyle block" is somewhat self-explanatory – basically a small farm which has been purchased for lifestyle purposes – i.e. to enjoy the country living, rather than as an economically viable commercial enterprise. In noting this, the Section 32 analysis does define lifestyle blocks as parcels of between 2 to 8 hectares.

The question then comes back to the definition of "productive" and a distinction could be drawn between "economic productivity" and physical production of (in this case) food – which then also has an economic value. Housing (within the NPS-HPL) has no productive value, despite housing having an extremely high utility value, both economically and socially. But more on this aspect later.

In many respects the bureaucratic definition of "unproductive" would appear to be: the block is not selling anything so there is no income so therefore it is unproductive.

To take a hypothetical example – assume a small block of 0.5ha. This would obviously have a house and attendant garden. What the research would indicate is that it would also run 2-3 sheep, have some fruit trees, and a vegetable garden. Produce from all this would be consumed by the household. Such produce would have an economic value, albeit small, but would not be costed by the household and is very unlikely to be valued in any survey or analysis of lifestyle blocks. So, it would be regarded as "unproductive", when it clearly is productive.

A review of the literature on studies of small blocks shows:

(i) From a summary of studies by Meister (1984):

- A large rural residential group of households' report that they grow their own vegetables and potatoes, a substantially higher proportion than even rural households (Crothers & Blackmore, 1980).

- In the western portion of the county the largest proportion of the 10 acre subdivisions had been retained in some form of agricultural use and in many instances, there had been an intensification of production per acre, although in some cases, here to a decline had resulted.

From a study of overseas literature, it was concluded that, given the dynamic factors operating in Auckland's fringe area, subdivision of rural land was a natural process that cannot necessarily be prevented by restrictive legislation
(Winn, 1970).

- There was a great variation in the intensity of farming operations from one holding to another. The land use data collected in the study showed that most "ten acre holdings" were being used for farming and that in some instances the land was being more intensively used than before subdivision (Mawhinney, 1974).

- The study showed that subdivision of high-quality agricultural land into small holdings, did not result in a loss of agricultural potential, unless over-capitalisation in the form of an expensive residence resulted.

  Flexibility (the ability to change from one land use to another at relatively short notice) appeared to be one of the greatest attributes of the smallholding (Cato, 1978).

- When both horticultural and pastoral holdings were considered, productivity was undoubtedly higher than if properties had remained in larger pastoral units. Average stocking rates for livestock compared favourably with average figures for North Island hill country and intensive sheep and beef farms. There was great variability in the stocking rates with several smallholdings achieving extremely high levels. Larger smallholdings tended to carry fewer stock per hectare (Moran et al., 1979).

- Using averages for size divisions, the area covered by the properties surveyed is approximately 3,810 hectares. Of this total, the area occupied by "houses plus gardens" (i.e. "non-productive" uses c.f. pasture/horticulture/or a combination) is 192.5 ha or 5 percent of the total. Since it cannot be assumed that gardens are unproductive it must be concluded that most land is used productively to some extent.

  Of the total area of 3,810 ha, 2,815 were occupied by properties growing some type of horticultural crop.

  Given these rough figures, it appears that unproductive smallholdings (with land being unused or simply in grass) were not the rule in the area but rather a small minority (Tauranga County Council, 1980).

- All holdings in this survey were sited on good agricultural land and the land was used well. There were indications that land use intensity did not increase with size but rather that intensity was lower on holdings greater than 8.0 ha.

The survey indicated that the small grape growers in the Poverty Bay Flats area made a worthwhile contribution to the national, as well as the local economy, that they made good use of the land resource, and that they were an accepted group within the locality (Gaddum, 1979).

- Overall productivity achieved from smallholdings studied was higher than that achieved from large scale pastoral production.

  The stocking rate for smallholdings running pastoral livestock was, on average, similar to that on larger scale pastoral farms in the area (approximately 15-18 stock units/ha).

  The facts however, that the average stocking rates are similar to district figures, that many properties are used for very intensive enterprises, and that labour is often provided very cheaply, leads to the conclusion that, on average, the land occupied by smallholdings is used in a desirable way (from a regional as well as national point of view) (Meister and Stewart, 1980).

- That part-time farming associated with rural subdivisions in the Manawatu is wasteful of farmland was not substantiated by the results of the survey. The survey found that on both subdivided land suitable for dairying and sheep/cattle farming, the agricultural land use intensity after subdivision was higher (Chiu, 1975).

- Grazing was the predominant land use but there was evidence of an increasing amount of land devoted to horticulture. In general terms, smallholders were, on average, farming their properties as intensively as the rest of the county.
  There was an indication, at least for this sample, that productivity (measured by stocking rate) was greater on smallholdings than on larger pastoral units in the county.

  It is possible for productivity to increase if subdivision of pastoral properties into smallholdings is allowed. The evidence of an increasing amount of land being devoted to horticulture points to an increase in the overall land value productivity. The claim that land is wastefully used by smallholders for residential purposes cannot be supported. (Arthur-Worsop et al., 1981).

- It appeared from the survey that a high proportion of the smallholdings in the rural-urban fringe were used for farming, and that amongst many property owners there was a desire to intensify farm production and thereby increase farm income.

It therefore seemed likely that the development of part-time farming does not result in a significant loss of production, and that on land of low productive potential, production may even increase in the long term (Mears, 1974).

- Total production (as measured in ewe equivalent units) has not been adversely affected by subdivision. Further, at the time of the survey, there were high levels of output from both nursery tree production and pigs. If these types of production were added to the 1978/79 total, it is estimated that production from the subdivided blocks would actually be higher than the original farm total in 1971/72.

  After an initial decline in production immediately after subdivision, production increased steadily and there were indications that this upward trend would continue. At the time of the surveys, production was at least equal to and probably higher than total production before subdivision. Both surveys showed significant trends toward intensification and diversification of production (Lawn et al., 1979).

(ii) A study by Meister and Knighton (1984), showed:
That smallholdings are beneficial to the (Manawatu) region. In general, smallholders were found to take an active part in the community and to make use of local services such as contractors, shopping facilities, public services etc. In terms of land use, it was found that the average level of production is higher than that achieved on similar types of land in larger holdings. On top of this, smallholders have brought a greater variety of enterprises and activities into the rural area. From the results there is clear evidence of diversification into horticulture (nearly 10 per cent of the area surveyed) and other livestock activities, and 11 per cent of the smallholders surveyed were involved in arts and crafts or other non-farming activities.

The results therefore reflect a situation where the development of smallholdings has led to more people living in the rural area. People who contribute to local community life, boost local services, introduce social diversity, while on average increasing total production of the land.

(iii) A study by Journeaux et al. (1996) in the Western Bay of Plenty of rural subdivisions (mean size 4.4ha, range 0.2 to 19.8ha) showed that in aggregate the small blocks were 3% more productive, measured on a gross margin basis, compared to the larger farms from whence they came.

There was some variation around this, with some blocks producing nothing, and others being run very intensely. Overall, 52% of the land involved was producing more or equal to what was produced prior to subdivision.

The measurement of “productivity”, as mentioned was via gross margin analysis, i.e. an economic metric. Blocks that were producing solely for domestic

consumption would tend to be missed from such an analysis. An update on this study (Scarrow and Underwood, 2005) showed a 29% increase in gross margin per hectare for land recently subdivided.

(iv) A 2004 study of small holdings by Sanson et al. measured production levels on these holdings, although there was no comparison with pre-subdivision production levels.

Table 1: Small Block Land Use

	Stock Numbers		Land Area	
	Number	Average	Number	Av Size (ha)
Dairy	35	45	33	9.1
Beef	274	32	225	6.7
Sheep	353	138	191	5.25
Tussock/Danthonia			256	6.7
Calf rearing	49	171	164	5.8
Deer	54	334	70	5.8
Goats	40	245	23	6.4
Horses	57	112	41	2.95
Poultry	43	1070	10	4.5
Pigs	15	208	6	8
Crops			19	3.4
Flowers			15	2.4
Glasshouses			11	0.6
Vegetables			14	5.8
Fruit			63	4.7
Vineyards			42	6.2
Nursery			16	4.75
Tree crops			4	7.5
Other plants			14	4.9

Source: Sanson et al. (2004), Tables 11 & 12.

The only “unproductive” category above would appear to be the blocks in danthonia and tussock.

They also showed that production levels compared to 2 years previously had increased on 32% of the blocks, stayed the same on 60%, and decreased on 8%. It is also important to note that potentially many of the horticultural blocks could well be commercial units rather than “lifestyle” blocks.

(v) A nation-wide survey of smallholders by Lincoln University (Cook and Fairweather, 2005) showed that 65.7% were engaged in productive land use activities, while 34.3% did not report any land use activity although the authors noted some confusion around this question.

They differentiated the small farms by income, as illustrated:

Table 2: Income Range

Income Range	No,	%	Mean
$0	538	57%	$0
$0 to $1,000	116	12%	$440
$1,001 to $20,000	214	23%	$6,372
>$20,000	79	8%	$208,866
Total	947	100%	$18,919

The "no income" bracket obviously had no product for sale, although 45.6% indicated they were using produce for home consumption. The authors estimated that the aggregate income from lifestyle blocks nationally was $2.55 billion, although a significant proportion of this was from the >$20,000/year blocks. They also noted that 87.4% had off-farm income.

(vi) Eade (2019) in his study noted that 66% of life-stylers generate little or no income, 25% generate "helpful income" while 6% generate their main source of income from the land. At the same time 88% of the landowners stated that they produce, including for own consumption. Which again emphasises the need to differentiate between production versus financial return.

Another aspect to consider, amongst the zeal to protect HPL in agricultural production, is that 89% of this is currently under pastoral production (LUCAS database). Converting this to a more intensive land use, e.g. vegetable production or permanent horticulture, is extremely difficult, given the restriction government and councils have put in place under the NPS -Freshwater Management, particularly around reducing nitrate leaching and access to irrigation water. In addition, there are a range of barriers to land use change, as discussed by Journeaux et al. (2017).

Substitution and Opportunity cost.

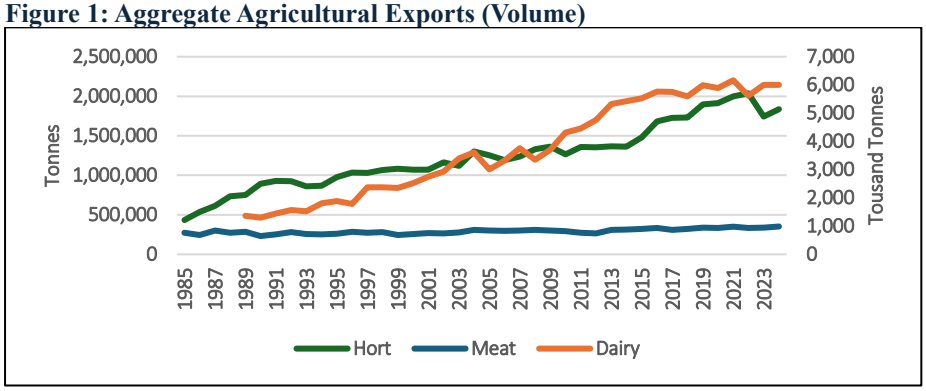
The key crime with which life-stylers are often charged with is that they do not contribute to, or even worse, detract from, the production of agricultural goods which can then be exported. This of course draws back to the (perceived) lack of productivity which is often measured in financial terms rather than actual production.

What is often not taken into account is the substitutive effect of the domestic consumption of the production from lifestyle blocks. If a lifestyle block is consuming its own produce, then obviously, by substitution, they are enabling produce from commercial entities to be either (a) consumed domestically or (b) exported. So, the charge is facetious.

In a similar vein is the issue of opportunity cost – if the lifestyle blocks did not exist, then the land upon which they would have taken up would be used for agricultural production, to the supposed betterment of us all. Again, the evidence for this is difficult to discern. Agricultural production in New Zealand has been maintained if not increased over the last 4 decades due to a range of factors, especially technology and advances in system management, and not withstanding adverse economic conditions over part of this period.

Meat production over the last 4 decades has remained relatively consistent, despite significant areas being converted to either dairying or forestry.

Figure 1: Aggregate Agricultural Exports (Volume)



Source: Statistics NZ. Note Horticultural exports are in tonnes (LHS), while Dairy & Meat are thousands of tonnes (RHS)

In addition to this, the agricultural sector has also been feeding a rapidly increasing domestic population, which has grown from 3.5 million in 1991 to 5.3 million in 2024 (Statistics NZ). Plus, as discussed earlier, the majority of small blocks are productive, so the opportunity cost, if any, would be quite small.

It is estimated that there are 175,000 lifestyle blocks, covering 873,000 hectares (Andrew and Dymond, 2013), of which 148,000 hectares are classified as highly productive land. These figures represent 6.3% of the total productive land in New Zealand (defined as arable/grassland/horticulture on the LUCAS database) and 10% of high quality land (LUC1-3). On the assumption that all lifestyle blocks produced nothing, then national gross agricultural production could be assumed to increase by around 6.3% so, in this instance there is an opportunity cost, albeit marginal, but still not real given that the majority of lifestyle blocks are productive.

It is also important to note that the productivity of the land, whether commercial farm, orchard, or lifestyle block, is very predominantly driven by the skill and expertise of the owner. While the quality of the land is important, it is more a driver of what is produced rather than the quantity, or the economic viability thereof.

Housing

The other key issue with subdivision of high quality land is of course, housing. In many respects the NPS-HPL is directly an anti-housing policy, where it looks to restrict housing development on high quality land, especially as housing is "non-productive".

This definition is of course very narrowly focused on agricultural production – usually it is defined as *producing or able to produce large amounts of goods, crops or other commodities.* But it can also be defined as *something that produces a positive result.*

As such, it is interesting to note that under Maslov's hierarchy of needs, "physiological needs" is the very first, which relates to the provision of shelter, food, and water. Note the "shelter" component of this.

A major issue around not building houses on high quality land is that the majority of towns and cities in New Zealand are surrounded by high quality land, which is why they were settled in the first place. To take Hamilton as an example, it is (a) currently one of the fastest

growing cities in New Zealand, and (b) totally surrounded by high quality land (predominantly LUC 2 and 3). Not building houses on high quality land therefore presents something of a conundrum, especially given New Zealand's rapid population growth, driven by high immigration.

The NPS-HPL, under Section 3.10 (3)(a) states that *Any evaluation under subclause (2) of reasonably practicable options must not take into account the potential economic benefit of using the highly productive land for purposes other than land-based primary production.*

This then excludes any other non-agricultural activity, the vast majority of which would have a significantly greater economic value than agriculture and again includes housing.

This is despite housing having an economic utility value well in excess of any agricultural production system. Which is a key driver of developments looking to subdivide land for housing purposes – the economic returns of the subdivision are much greater than leaving the land in its current use. As noted by Treasury in their comment on the NPS-HPL (Treasury, 2019), the differential is in the order of $1.5 - $2.3 million per hectare. The opportunity cost, therefore, to housing and the nation, is (a) very real, and (b) substantive.

Part of this is compounded by the Government's and Council's restrictions on subdivisions, which drive up the price of land – it is now a significant component of the cost of building a house, which in turn creates a scarcity value, thereby increasing the economic incentive to subdivide.

This area of a significant cost advantage to housing versus agricultural production, also raises the issue of market failure. In this respect, the assessment of "market failure" is that the market is not costing in the scarcity value of the land under agriculture, in the sense that if it is all used for housing then food would either be unavailable or the cost of this would skyrocket.

The Section 32 analysis for the NPS-HPL notes that the area of HPL converted to new urban areas, over the period from 2002-2019, was 15,057 hectares, or 886 hectares/year. The total area under LUC 1-3 which is potentially available for housing is approximately 3.5 million hectares[1][2] (excluding land under forest, existing urban, existing horticulture, and other – LUCAS database). In other words, it would take 4,025 years to fully use up this area. Within this 3.5m hectares, it should be noted that the scarcest resource is LUC 1 land, of which 165,000 hectares is available – the vast bulk of which is currently under pastoral farming.

In the next sentence, the Section 32 analysis states that the total New Zealand urban area increased by 13% (from 2002 to 2019) to approximately 206,565 hectares, of which 27.7% was on LUC1-3 soils. If one does the math on this it shows an increase in the urban area on HPL soils of 6,583 hectares, or 387 hectares/year – which would take 9,207 years to fully cover all HPL land[3].

[1] LUC1 = 165,000 ha, LUC 2 = 1.1m ha, LUC 3= 2.2m ha. Currently there is also 106,100ha of HPL currently under exotic forestry.

[2] The current government is proposing to remove LUC 3 land from the definition of HPL. While this will help, it does not address the inherent weaknesses of the legislation.

[3] 182,801 x 113% = 206,565, i.e., a 23,764 ha difference over 17 years, of which 27.7% was HPL = 6,583ha

Apart from the need to check the veracity of the statistics, perhaps the main indication is that it is going to take a very long time to extinguish the resource.

The next aspect to consider is food security. Let's be unequivocal – New Zealand does not face a food security problem with respect to food production. It is estimated that New Zealand produces enough food to feed 40 million people (Proudfoot, 2017), and currently we export circa 90% of the food we produce.

Yes, New Zealand imports quite a lot of food, mainly due to either (a) it can't be produced in New Zealand, and/or (b) it is far more economic to import it, and this situation is not going to alter, regardless of the status of our HPL soils.

As an aside, the world is also not short of food – the issue is around distribution, and hundreds of millions of people don't get enough to eat primarily due to the stupidity of the politics they live under.

It is interesting that the only mention of food security in the NPS-HPL Consultation document (MPI, 2019) was that subdivision of HPL *may* (authors emphasis) increase the cost of vegetables. No evidence was presented on this, basically because it doesn't exist.

If New Zealand was ever unfortunate enough to suffer from a volcanic or nuclear winter, then the availability or otherwise of HPL would be a minor consideration, as the limiting factor on food production would be low temperatures and limited sunshine hours, regardless of the quality of the land. And if we didn't have houses to shelter in then we'd just die even more quickly.

Coming back to the question of market failure therefore, it is difficult to see where this exists. The "market" assesses that the scarcity value of agricultural land is minute, that the issue of food security is non-existent, and hence ascribes no real value to these factors. On the other hand, it recognises both the value and scarcity of small blocks and houses, and values them accordingly.

The CBA for the Section 32 analysis also discussed, but didn't value, intangible impacts such as environmental. This is an area which has not been studied much, although Pearson (2021) noted: *The results showed that these residents* (owners of small blocks) *have a good sense of environmental stewardship and a desire to plant native species, improve connectivity, and protect their land from the invasion of pests and weeds.*

Undoubtedly there would be some impact, e.g. vehicles driving to and from work etc. But the incremental difference between living on a lifestyle block versus in town is yet to be established. Housing also has an environmental impact, often significant, which society endeavours to manage – often not overly successfully – but given the value of and need for housing, society readily accepts the trade-off. So again, it is difficult to establish a market failure in this area.

In many respects, housing does not need to go onto highly productive soils – the issue, as mentioned earlier, is that most of our towns and cities are surrounded by highly productive soils, so the options are limited. Additional housing could well be directed onto lower quality land, but often the issue here is one of infrastructure – the need to provide roading/transport and utilities etc. Something Council's don't excel at.

Summary

The key points therefore are:

- There is no shortage of HPL within New Zealand
- Most small/lifestyle blocks are productive in a food-producing sense but are not necessarily producing an income. Assessment of the productive value of such blocks need to take this into account.
- At an aggregate level, the perceived opportunity cost impact on national production is largely illusory.
- Most small/lifestyle blocks are not economically viable but are economically sustainable.
- At a local community level, they significantly add to the economic and social viability of that community.
- New Zealand does not face a food security issue, and our agricultural exports have increased over recent decades.
- Housing is a productive use of land and has an economic utility value which is well in excess of the value of high-quality agricultural land.
- There is no indication of market failure around valuing high quality agricultural land.
- Overall, the NPS-HPL is a poor piece of legislation, created without any research or analysis, and which is causing more problems than it purports to solve.

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