

# Soil and Nutrient Network



National Advice Hub  
T: 0300 323 0161  
E: [advice@fas.scot](mailto:advice@fas.scot)  
W: [www.fas.scot](http://www.fas.scot)

Helping farmers improve soil and nutrient management

Case study -

## 8 Sand Street, Isle of Lewis

The croft of 8 Sand Street, tenanted and worked by A J Ross and sons, is Less Favoured Area land split into four land parcels, the main croft and three apportionments located outside of the town of Stornoway. The total croft land worked is just over 11ha total, with the apportionment land accounting for 85%. Apportionment land is typically rougher and required high levels of input to turn into workable grazing croft land. The croft, in conjunction with additional land and common grazing availability, runs a breeding flock of around 275 ewes. They are brought in from the common grazing moors to graze the croft around lambing time and again for a period at tugging. The land is only utilised for grazing purposes.

### Land Improvement Limitations

The main objectives of nutrient management and soil consideration in the Outer Hebrides is to mitigate limitations and overcome challenges faced in the harsher climate. We had to first assess what those limitations are.

**Rainfall** is a common complaint among crofters suggesting it as the main issue. However, the annual rainfall in 2014/15/16 was 1324mm, 1612mm and 1572mm respectively. This falls in line with the overall Scottish average, and a full 200mm less than the North of Scotland average. This suggests other issues are more limiting.

**Drainage issues** are more clearly defined as an issue. Soil management in the form of cultivation hasn't occurred on some sites in as much as 30 years or more. Wet croft land due to underutilisation or neglect often puts new producers or existing crofters from investing heavily in nutrient replenishment or pH variation as drainage issues persist. Active improvement in one croft can have minimal effect if neighbouring crofts do not follow suit.



Croft Costing Example:

Current prices and product availability have 16:16:16 fertiliser locally priced at £466/tonne and TSP at £520/tonne. Liming materials typically used are shell sand which is currently costing £40/tonne average.

The requirements of 8 Sand Street, with a pH of 4.4, means a lime requirement of 13.9t/ha but sand, to achieve the same result, requires 27.8 t/ha. The soil report indicated Low P status and Low K status. The recommendation was to apply 375kg/ha 16:16:16 and 70kg/ha TSP. At 3 ha this would be at an overall cost of £719, or £240/ha before haulage and application costs.

For more information on the Soil and Nutrient Network see [www.farmingandwaterscotland.org](http://www.farmingandwaterscotland.org). For dates of SNN events, find us on Facebook or follow us on Twitter @FarmWaterScot.



Scottish Government  
Riaghaltas na h-Alba  
[gov.scot](http://gov.scot)



The European Agricultural Fund  
for Rural Development  
Europe investing in rural areas

# Soil and Nutrient Network

## Comparative Assessment

---

In order to obtain an accurate representation of soil conditions in crofting agriculture a comparative assessment was made between neighbouring crofts against the croft of monitor croft land.

Agricultural Consultants Gavin Elrick & David Lawson provided on site assessments of several crofts to explain visual issues, discuss current management and explain soil reports of the sites. This displayed the variability on a croft-to-croft basis.

| Croft                      | pH  | Phosphorus  | Potassium   | Magnesium    |
|----------------------------|-----|-------------|-------------|--------------|
| 8 Sand Street<br>(monitor) | 4.4 | Low (4.10)  | Low (73.30) | High (394.0) |
| 22 Garrabost               | 5.1 | High (24.4) | M (132)     | Mod (123)    |
| 10 Garrabost               | 4.9 | High (13.6) | Low (47.9)  | Mod (81.9)   |
| Bennadrove                 | 5.6 | Low (3.55)  | M (85.6)    | Mod (116)    |

The variability in nutrient levels in the area was discussed with issues differing on a croft by croft basis. Bennadrove suffers from topographical issues, hill sloping croft, which reduce Phosphorus levels in high rainfall, similar to the issue seen at the monitor croft. All soil reports stated mineral soil types which opened the discussion to other factors that would result in variability in sample value range.

### Historic Activity

In addition to topographical and climactic influence, David Lawson and Gavin Elrick discussed the management of each croft and the historic activity that can cause variability in nutrient and soil condition. 8 Sand Street was deemed to have indications of compaction in several areas. This is resultant due to no cultivation having occurred in the last 20 years. Compare with 22 Garrabost which was cultivated as part of a reseed in the last 3 years. Both crofts had applications of fertiliser within a similar timeframe, but the soil results showed clear variance. This difference is representative of the island as a whole where croft land can be left derelict and unused resulting in a difficult and expensive task to resolve for new and active crofters.

### Key Findings

- Variable factors influencing nutrient and soil conditions
- Historic activity, or lack thereof, an inhibiting factor in conjunction with environmental conditions
- Soil analysis results show wide range
- Expensive to rectify misuse or non-activity
- Availability of support aid for now, plus research opportunities.

### Mitigating Factors

---

**Grant aid** eligibility for crofters helps to negate some of the high cost impact to improving ground. Both drainage and land improvement are eligible under the current Crofting Agricultural Grant Scheme in the form of 60%, or 80% to crofters under 41 and within 5 years of taking up tenancy of the land.

**Alternative sources of materials** are being sought to help cost effectively improve land. Biosolids are readily available locally. This has led to discussions about suitability on a business-to-business basis.

**Advisory** capacity and research and development has been suggested in order to consider new innovations to perhaps change the dynamics of activity reducing cost input, changing practices or diversifying to make land more productive and use nutrient and soil management tools to achieve these goals.