Improving Small Farm Productivity:
a response to the Countryside Productivity Small Grants Scheme

Published by Ele Saltmarsh, Rebecca Laughton & Jyoti Fernandes for The Landworkers Alliance. 2019.

The Countryside Productivity Small Grants Scheme:
Essential support for local food, the environment and communities

The Landworkers' Alliance is a union representing a current membership of about 1,000 active farmers, growers and land workers. Our members focus on delivering high quality local food while simultaneously caring for and promoting the environment, biodiversity, and natural landscapes; ensuring high standards of animal welfare and sustainability in agriculture; and offering skilled employment, community outreach and integration, as well as delivering numerous other public goods.

The following are inputs from our membership regarding ways in which the Countryside Productivity Small Grants Scheme could be configured to improve the productivity levels of smaller scale, agroecological farms providing food for domestic markets through short supply chains. Our policy team sent out a request for members to send in their comments on the 2018 Countryside Productivity Scheme, in particular asking about barriers to accessing the scheme and ways in which it could better support them. We had 87 email and telephone responses from across England. This report summarises their responses, and makes some recommendations. As background to this evidence we reference the report "A Matter of Scale"[1] which provides evidence from an analysis of 69 farms illustrating how small agroecological farms can be highly productive, efficient, resilient and innovative, while also providing multiple environmental benefits, higher animal welfare, social capital and jobs. The report and comments from respondents illustrate how small farms can be highly productive, but also how there are varying levels of productivity on small farms, just as there are on larger farm units. There are several recurring issues which may mean that agroecological farms do not live up to their full potential.

1 R Laughton 2017 A Matter of Scale: A study of the productivity, financial viability and multifunctional benefits of small farms (20 ha or less). Landworkers' Alliance and Centre for Agroecology, Water and Resilience, Coventry University.

Barriers to Small Farm Productivity

- Disproportionate prices for smaller areas of land and the high price of rural housing present initial barriers to establishing productive small farms.
- High initial start-up costs mean that many small farms have low initial investment capability, and so operate at a disadvantage, with inefficient or inadequate infrastructure to achieve maximum production capacity.
- Low profit margins mean that changes in the business require long-term planning and savings to build investment capital, and are more subject to change or cancellation in periods of financial instability.
- Subsidy creates an uneven playing field for smaller vs larger agricultural units, without providing capital for small-scale farms to invest in their farm business.
- A hi-tech approach to developing equipment for larger farms results in a lack of small scale equipment, particularly small tractors and harvesting equipment.
- A lack of training results in inefficiencies and losses due to inexperience.

Productivity in the Context of our Food System

"Historic productivity schemes have not approached increasing productivity in a strategic way. By focussing on hi-tech equipment, suitable for larger farms, they lowered the production costs for farmers who are likely to be well capitalised to sell wherever they can and compete with the global market. High tech productivity gains end up lining the pockets of supermarkets and multinationals. If a scheme really wants to focus on increasing productivity, it should start with those farmers who lack the equipment, skills or knowledge, and need either standard equipment and infrastructure or specialised small scale equipment to help farmers sell produce directly to local people and create a localised food system fit for the future."

The imperative to feed the world tends to support an agenda to increase food production that is indifferent to what is produced, where, by whom, and to the actual outcomes for health and well-being[1]. Concerted efforts are required to shift the debate from 'feeding the world' to how well we feed ourselves, from net calorie availability to access to healthy diets from food produced in a way that preserves our environment and doesn't undermine the ability of future generations to feed themselves.

In addition, many attempts to increase productivity are based on the premise that to balance environmental preservation with food production, it is necessary to intensify production on the most fertile lands while setting aside other areas of land as natural reserves. This ignores the fact that production through the intensive, commodity-focused farming drives environmental damage, even if some of the technologies improve environmental performance. By focusing on uniform crops suitable for the commodity market, hi-tech productivity grants ignore the climate impact of global supply chains.

In the UK, we need a focus on developing highly productive farms that address how to produce and distribute well-produced food equitably while simulteously addressing the climatic and environmental impacts of food production in a resource constrained world.

Increasing production of foods that maintain the high diversity of nutrients necessary for public health is as important as increasing net calorie production. Direct sales to consumers increase the availability of nutritious food. Therefore, moving towards a sustainable food system requires an examination of what we consider desirable outputs in a small grants scheme.

1 IPES- Food 2016 From Uniformity to Diversity:a paradigm shift from industrial agriculture to diversified agroecological systems. International Panel of Experts on Sustainable Food Systems.

Productivity in the Context of Sustainability

In purely economic terms, productivity can be defined as a ratio of outputs to inputs.

Total factor productivity is a measure of how efficiently land, labour, capital and other agricultural inputs are used together.

Agricultural performance is more commonly measured using partial factor productivity measures, which divide output by a single input (eg land area or labour) and are therefore easier to estimate. Traditionally, agricultural yield was measured in terms of output per unit land area, however this measure lacks the ability to account for increased productivity arising from polycropping, rotations and other mixed farming systems.

In recent decades, as the cost of labour has increased, productivity or efficiency has more commonly come to mean output per unit labour as farms seek to drive down costs.

In the small scale farming sector there are plenty of keen workers and aspiring farmers, so we negate the need to replace labour in farming systems with machinery. Reducing labour means the loss of jobs in the farming sector.

The only true limitations to measure output against are the limits of the earth.

Any definition of productivity needs to recognise the costs of production- particularly to the environment- which should not be externalised. Productivity should favour a reduction in the external inputs required while minimising external impacts of agriculture.

The sustainability imperative requires a re-examination of the term productivity, with broader definitions of both outputs and inputs being necessary. For example as well as yield (weight or value of crop per unit area), outputs could include biodiversity and soil health. As natural resources become more scarce, partial factor productivity could be measured against inputs such as energy or water.

To internalise the negative costs of agriculture, productivity could also be measured against negative externalities such as greenhouse gas emissions, soil erosion or water pollution.

The narrow focus of productivity, in the past, has resulted in reductionist agricultural systems, which at best neglect the multifunctional benefits possible from more diverse agroecological systems, while at worst result in environmental degradation, poor animal and social welfare and loss of meaningful employment.

Defining Resource Productivity

Productivity is not just about yield over all else, it is about using resources efficiently while producing high yields of diverse and healthy foods. Productive farms can provide environmental and social benefits, such as biodiversity conservation, improved water and air quality, and access to local, fresh, and culturally appropriate food.

Resource productivity means raising the ratio of 'output' to natural resource 'inputs'. The fewer natural resources used per £1 of output, the less potential waste there will be. Hence raising resource productivity both saves resources and helps improve the environment. Luckily, the definitions of productivity used by current schemes and the Agriculture Bill focus on increasing resource efficiency. In this context, we put forward the following categories of actions can be taken to improve resource efficiency:

1 Enhancing the recycling of biomass and optimizing nutrient availability and balancing nutrient flow- Feed, fodder and litter are provided by the crop system.

2 Securing favourable soil conditions for plant growth, particularly by fertilizing with farm yard manure and composts, ground cover, and by enhancing soil biological activity.

3 Minimizing losses of solar energy, air and water by way of micro-climate management, water harvesting and soil management through increased soil cover.

4 Enhancing wildlife diversity on the farm. Increasing production diversity in order to enhance synergies between different areas of the farm and increase the farm self -sufficiency (fertilisers, pesticides, animal feed, energy, etc...) and the integration of crops, trees and livestock.

5 Enhancing beneficial biological interactions to promote key ecological processes. There is minimal need for external inputs, as many can be produced on the farm itself.

The Landworkers' Alliance promotes the integration of agricultural and ecological goals through adoption of agricultural practices that enhance the underlying fertility and sequestration capacity of soils, as well as above and below-ground biodiversity, based on knowledge of biological processes instead of external inputs.

This approach, known as agroecology, also results in increases in productivity as the inherent quality of the land is gradually enhanced, rather than degraded. Resource use efficiency is maximised through diversity in production. Such diversity also results in public health benefits, through diversity of diet, and increased inherent resilience of farms in the face of climate change.

Suggested Scheme Objectives

The current scheme objectives are improvements supports resource efficiency, animal welfare and nutrient management. The Scottish Small Farm Scheme both expands and adds to these, with the objectives of improving and redeploying production, improving quality, promoting the diversification of farm activities (primarily conversion to organic), and preserving and improving the natural environment, hygiene conditions and animal welfare standards.

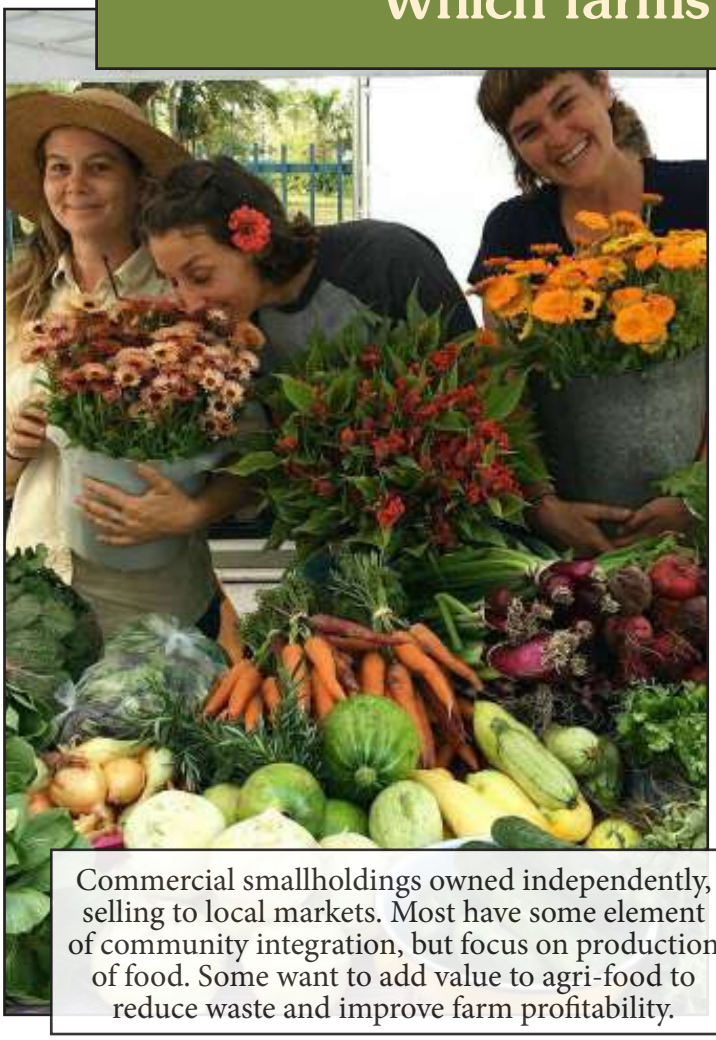
We suggest that the English Countryside Productivity Grant Scheme objectives should be enhanced to support activities which improve and redeploy production in line with public health objectives alongside sustainable resource management and environmental improvement. This would mean revisiting restrictions on supporting "core production".

Our suggested scheme objectives are:

- Improving the quantity and quality of production and distribution of fruit, veg, dairy, and high animal welfare meat for public health. This includes support for direct to consumer marketing and processing to add value to agri-food and organic coversion support.
- Provision of public access to farmland through community integration of farms.
- Resource-use efficiency, or 'eco-efficiency,' which means increasing the production yields per unit of inputs and per unit of undesirable outputs.
- Soil and nutrient management for long-term sustainability.
- Adaptation and mitigation to climate change.
- Enhancement of biodiversity and environmental quality.
- Higher animal welfare.

These objectives take into account a holistic understanding of what we need from our food system- the need to redress the negative impacts of agriculture, restore nature and to distribute nutritious food efficiently within localised markets to improve public health.

Which farms need funding?



Commercial smallholdings owned independently, selling to local markets. Most have some element of community integration, but focus on production of food. Some want to add value to agri-food to reduce waste and improve farm profitability.

Non-commercial smallholdings whose primary focus is ecological restoration, but would like to produce food.

Community farms whose primary focus is community outreach and education alongside food production, some are for profit and some not-for -profit.

Simplified delivery of schemes

Flexible, non-prescriptive applications

A small farm grant scheme would be easiest to apply for and administer if farmers were able to apply for any equipment they needed- up to a certain percentage- by creating a farm improvement plan, which illustrates how the requested equipment would improve the farm business against one or more of the objectives of the scheme. This would foster innovation.The applicant would need to specify a time line for the improvement with measurable outputs. The results would need to be measurable and subject to testing in order to protect public money, but it is important to balance the work in involved in assesment with ease of delivery.

Guidance could help farmers determine suitable equipment and suggest the range of outputs and deliverables. Some farming equipment, especially horticultural equipment, is often so specialised that there is only one manufacturer so three quotes are not possible A flexible quoting system would allow access to such specialised equipment. Some assessment tools such as the standard output calculator used in the Scottish scheme, the public goods tool, or carbon calculators could help with assessment. Some members suggested that new metrics for measuring productivity should be developed, such as the Organic Market Garden (OMG) data set- which aims to develop a groundbreaking new metrics to measure sustainability.

Advisors and Reporting

A Countryside Small Farms Productivity Scheme should provide advisors to assist farmers in completing their applications. As the ELMS develop, perhaps the same advisors who assist farmers in creating land management plans could advise and assist farmers to create simultaneous farm improvement plans. The reporting requirements could work together with the reporting for the ELMS, with reports and assesments being sent to the advisor, but within a time limited fashion.

The Scottish suite of small grants schemes for agriculture and rural development are flexible and easy to apply for, encouraging uptake by a wide range of different enterprises in all stages of development.

Part 5 – Details of proposed works

Refer to section four of the full scheme guidance.

Use this section to provide details of your proposal. If your application includes more than one proposal, then additional forms can be obtained from https://www.ruralpayments.org or your local area office. You can submit a number of additional proposal forms with your main application form.

The 12 categories of operation eligible for grant are listed on page 24 of the full scheme guidance. Please enter the relevant operation reference (1-12):

5.1 Description

Please give a full description of the works proposed. This should include a detailed plan of your proposed improvements showing dimensions, type and material to be used in construction, together with a copy of a 1:10,000 Ordnance Survey map showing the site and location in relation to the unit as a whole.

NOTE: If you are planning to complete the work yourself, please detail what qualifications/ skills/experience you possess that will allow the project to be completed to a satisfactory standard:

Description of works to be undertaken

Type and material to be used in construction

Dimensions (size, length etc)

Plan of proposed operation (attach on separate sheet if required)

5.2 Objectives and business plan

Prior to completing this section refer to Appendix B of the full scheme guidance.

a All operations are required to meet one or more of the following objectives in order to be considered for grant aid.

Please tick the appropriate boxes to identify the objectives which your proposals will meet.

To reduce production costs	☐	To improve and redeploy production	☐
To improve quality	☐	To promote the diversification of farm activities[1]	☐

To preserve and improve the natural environment, hygiene conditions and animal welfare standards ☐

Support may be available where it is a first-time improvement, where the improvement is an integral element of a larger project, or where a substantive upgrade is involved. Support will not be available for applications which are solely intended to replace existing improvements and which are intended to serve the same purpose as the original. However, where a previous facility is classed as derelict, i.e. no longer serviceable or fulfilling its function and incapable of being repaired or maintained, then assistance may be available.

b Please state how the identified objective(s) will be met. Include reference to current and future cropping and stocking activities, listing the extents and stock type and numbers where appropriate (examples overleaf). Failure to fully complete this section will result in your form being returned.

i. How will the proposed works meet the identified objectives? Continue on a separate sheet if necessary.

ii. Please explain how this proposal delivers a cost benefit to your business, value for money to the public purse and is justified both agriculturally and environmentally

iii. Outline changes to farm activity following implementation of proposals

- Cropping
- Stocking
- Other

1 This relates to diversification within the agricultural sector such as changing methods of production (e.g. organic or horticulture), introduction of new crops and introduction of specialist breeds.

Funding for Standard and Second-Hand Equipment

"On the whole the things they list are too big and too snazzy and therefore too expensive – ruling out small farmers. Eg – a mobile sheep handling unit must be able to accommodate 250 sheep…my 50 sheep are essential to my mixed farm."

The majority of people responding thought that it was a problem that standard agricultural equipment is excluded, and that the list is too restricitve. It would be best not to have a list at all.

Productive, efficient agroecological systems often use very standard or low-cost agriculture equipment and inputs, only some of which may be considered agri-tech. This equipment is vital in increasing yield, quality and resource efficiency of the system. Agri-tech is useful, but there is no reason a productivity scheme should only support agri-tech, especially only approved equipment on a specified list. This is unnecessarily limiting. There was concern that the direction of productivity is going towards robotics, but that is risky and will only benefit a few farmers. The risk is that prices go down, farmers not using robotics can't compete, and as a result our net productivity declines.

Many LWA members wanted to know who makes the decisions deciding which equipment goes on the list and what criteria are used to determine what goes onto the list.

For example, many members stated that they could become more resilient, efficient and productive by adopting low tech methods to improve their farms:

- producing the inputs needed by the farm on the farm- including saving seed, growing and processing homegrown animal feeds, creating their own field compost, seed compost, and green manures.
- increasing resilience- saving locally adapted seeds, breeding hardier and more efficient livestock, putting up good fencing.
- having small tractors and other equipment that use less fuel to run, or investing in draft animal training and equipment.
- harvesting rainwater, and reducing runoff of water and soil with good channels and swales.

Equipment listed by respondents: to illustrate that there should be no list!

Arable and Horticultural:

- Polytunnels/4 season greenhouses
- Small tractors
- Small combine harvesters
- Irrigation equipment, including travelling irrigators
- Rear discharge muck spreaders
- Crop weeding systems
- Dehusking equipment
- Grain drying equipment
- Silaging systems
- Trees for shelterbelts/windbreaks and for orchards
- Tree guards
- Fencing
- Ride-on mowers
- Greens harvester
- Tilthers
- Wheelbarrows
- Push seeders
- Reciprocal hoes
- Manual bed ridgers
- Composting facilities

Livestock:

- Barns
- Livestock
- Milking machines
- Hot water hand wash
- Food waste treatment systems for feeding waste to pigs and chickens
- Electric fencing units
- Poultry bell drinkers
- Moveable poultry housing
- Lighting for chicken houses, dairies etc
- Cattle crushes

Renewable systems:

- Non-polluting renewable energy production systems, particularly solar and small-scale wind turbines
- Electric tractors
- Electric woodchippers
- Electric delivery vehicles
- Solar-powered well or bore-hole extraction systems

Financial eligibility requirements

Minimum grant size is too high

Many of the farmers responding said that the amount of the normal grants were too high, particularly because the match funded amount of 60% would be too much for them to afford. Many businesses cited a business model run on low external inputs, and the need to stay out of debt. The small grants scheme we recommend would be for smaller amounts- we would recommend the minimum grant size as £2,500, which should provide 40-100% of the project costs at the start of the project- 70% if the project is for an individual farm and the amount needed is below £10,000, 50% if needing between £10,000-£20,000 and 40% if from £20,000 to £100,000. 100% should be provided if it is for a collective, non-profit community initiative which allows for equipment sharing.

We would also recommend means testing eligibility for the funding, like the Scottish small farm scheme. Many farms are short of start-up funding after the purchase of land, have little capital in reserve for productivity improvements, and suffer from cash flow issues. Bank loans for small scale farming are extremely diffcult to secure.

Match funding from labour is excluded

Farmers add their own labour, and build equipment and buildings. For some projects there are plans available for the equipment, but farmers need to weld it together themselves. The grant can be for the materials, but the match funding should be able to be met by the farmers own labour. This would also help to improve farmers' practical skills in building and welding. Many farmers use open source plans to create innovative equipment. An easy to administer system needs to be in place for self built equipment so that 3 quotes are not required for each material.

Funding in arrears

"If the farmer had the money to buy the equipment then they wouldn't need the grant – so having to buy it up front and receive the grant afterwards is just silly. Better would be to pay the farmer the money and within 6 months they have to send in invoices to prove that they have bought it. If the item they buy is other than agreed then they have to return the money. However the scheme does still need to allow people to buy the item upfront and receive funding afterwards, because if you're buying a second hand item you often need to move fast."

Improving productivity by supporting New Entrants

"Nothing increases our national productivity like helping a new farm to get set up."

Productivity grants should work together with proposals for a New Entrants Agroecological Start Up Grants Scheme. We are advocating for support systems to help new entrants overcome the initial costs of accessing land, setting up farming businesses, and accessing the training and mentoring they need. Contact the LWA for more detailed information about these proposals.

Marginal Gains

There is an argument for supporting "marginal gains" that improve the productivty of existing farm systems rather than transformative changes that like might be required by very expensive new bits of technology or a capital intensive new production system. Smaller marginal gains in productivity fix well with a mixed farm agroecolgical approach. Expensive equipment tends to encourage monocultures because attention has to be focused on enough production of a single crop or to repay the capital investment. Smaller, less expensive equipment can make an enormous difference through marginal gains in productivity as a part of more diverse, mixed farming systems. People should be able to justify what they think will help increase their productivity the most rather than choosing from a list. This gives them the flexibility to choose what works best for their farm, without getting into debt.

Case Study: Shillingford Organics

Harry, at Shillingford Organics in Devon, wants to install an automated irrigation system in their polytunnels and outdoors. They grow on up to 40 acres and currently have just a few sprinklers for irrigation. The sprinklers that are generally used are not that efficient and a lot of water is wasted. The dry summer last year sounded like quite a struggle (as it was for everyone) with the lack of rain and the heat.

The long-term saving advantages of having a travelling irrigator on a site this scale, such as a four-wheel chassis boom, would very soon pay off the investment. Despite being an expensive type of irrigating system, this type is a much more efficient system in terms of water usage and wastage- which will be incredibly important as water becomes more scarce. Irrigation equipment such as these booms would be a valuable investment for a farm such as Shillingford, both for their long-term savings and the environmental impact, but the cash to make the investment is often not there and so grants to enable farms to purchase equipment second hand or new would be invaluable.

Shillingford supplies a significant amount of local organic food as fruit and veg boxes to families in and around Exeter, as well as running several farmers' market stalls and a high street shop.

Case Study: Eves Hill Veg Co.

Eves Hill Veg Co is a not-for-profit market garden in mid-Norfolk on rented farm land (just over 1 acre). We sell our produce locally to restaurants and through a veg bag collection scheme and this year hope to turn over £18k of produce sales (this is year 4 since we started, so it still a new business). We also run an open volunteer programme and have a contract with a local community college to deliver free gardening courses to long term unemployed. Our aim is to create an open space for people to learn about productive horticulture. We also run a voluntary traineeship (an education-labour ex-change, we've run 6 so far and all are now employment) and a paid apprenticeship (national living wage) which is supported by donations from our local community. We believe we are the only productive horticulture apprenticeship in East Anglia- there is no longer a Government apprenticeship scheme available, so we made our own one up.

In just 3 short years we have created 4 jobs at our garden, but each year it is a struggle to balance produce sales, local donations, small grants (e.g.. Awards for All which is not endless) and endlessly bidding for contracts to deliver gardening courses. Every year we don't know if we will be here another. What we really want is to grow enough produce to fund our project through produce sales. We started the project with £5k grant from UnLimited Fund for Social Entrepreneurs, and other than that and a lot of voluntary hours by ourselves and local goodwill, we have not had any capital investment. We are desperate to develop our business model and it's about £10k of equipment that we believe would unlock our earning potential. We need to buy a tractor and implements, but not a new one – they are too big, too expensive and not developed for small scale horticulture! We need an old 1950s style tractor which you can pick up for £3-5k plus another £3-4k of implements. We also need £2-3k of basic equipment such as rainwater capture (Norfolk is the driest place in Britain!), irrigation, more basic hand tools, and so on. We believe that in the first year after investment we could increase our yields to £26k, followed by £35k in year 2 and if all goes well, we could expand land and based on other similar projects we could be yielding £40-45k per year – this is on a plot of land that was previously growing £150 a year of wheat! This would secure our work and help us develop our people-centred growth model.We have sought capital grants, but because we need second-hand equipment, we only need a small amount, and we don't have the cash flow to buy equipment upfront, we keep hitting a brick wall on finding this kind of money.

Case Study: Hill and Coombe Microdairy

Hill and Coombe Dairy is a small-scale organic dairy producing raw A2 milk from grass fed Jersey cows that keep their calves. The dairy is run by Freya and Seb with help and hindrance from their two small children. The couple farm with a love for nature and animals and a passion for sustainable and ethical practice.

THE HERD: We have a growing herd of 8 friendly and beautiful Jersey cows. We keep our cows and calves together, a practice that enables the calves and their mothers to create and maintain a bond that is essential for optimum animal health and wellbeing. We milk once a day, leaving enough milk for the calves to thrive. Once of age, our heifer calves will join the milking herd and our bull calves will be reared for beef. Our cows are grass fed, grazing the lush meadows and browsing the diverse hedgerows and woodland edge for as many months as possible. During the colder months their diet will be supplemented with hay from our organic pastures made with help from our team of working horses. We need a herd of 15 to maintain our business but we were unable to access the funding to buy enough livestock. We had to borrow £50,000 to buy our initial herd, a single cow milking machine and begin our dairy, but we need more investment and equipment to create a financially sustainable business.

OUR DAIRY PRODUCE: Our raw A2 organic wholemilk is creamy and delicious. Raw milk from Jersey cows fed their natural diet is a whole food that is nutritionally dense. It is packed full of rich beneficial bacteria and enzymes and is a wonderful source of easily absorbed vitamins A, D, E and K2 as well as Omega 3. However, we are still not able to sell it until we invest further in our dairy. The milk will be sold to local people to the benefit of our community.

REGENERATIVE AGRICULTURE: We are working closely with Chagfood and Chagfarm, incorporating vegetables, flowers, pigs, cereals, dairy and beef to create a 'whole farm system' that strives to enhance and protect our natural environment. By combining diverse herbal leys, green manures, mob grazing, hedge laying, tree planting and wetland management we aim to create a vibrant environment that will build soil structure, sequester carbon and encourage insects, birds and other wildlife onto the farm.

Maximising the impact of grants

R&D and continuous improvement

The scheme could also invest in farms or programmes which are carrying out R&D or developing better farm practices, like seed breeding programmes, agroecological farm-based research trusts, animal breeding programmes, and appropriate tool networks. One farm mentioned that it would be interesting to try different pest management systems and use biological pest controls. Another respondent mentioned that the grant could invest in soil testing equipment to enable farms to benchmark their improvements.

Training

The grant could include some funding for training. Many mentioned that they would like to see some support for the farms funded by the scheme to be enrolled in a farmer to farmer training network as demonstration farms, with appropriate support given to the farms if they host educational visits.

The Landworkers' Alliance (LWA) is a grassroots union of small-scale, ecological and family farmers across the UK. We campaign for the rights of producers and lobby the UK government for policies that support the infrastructure and economic climate central to our livelihoods.

For more information contact: jyoti@landworkersalliance.org.uk

info@landworkersalliance.org.uk www.landworkersalliance.org.uk