



Land Stewardship

Sustainable Agricultural Practices



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What is Stewardship?

Land Stewardship: a possibility for private parties

We live in a rapidly changing society which presents us with problems which must be dealt with from different points of view. To suggest that total responsibility for solutions should be left in the hands of public institutions is, in all probability, an error. So the philosophy of **Land Stewardship** intends to regain both the private and voluntary initiatives in the conservation of environmental values.

This in turn gives rise to the **Sustainable Agricultural Practices Agreement** a voluntary agreement between a private farm or estate and an environmental organisation, that will look for ways to help each other and so be mutually beneficial.

New values which are increasing in importance

In societies such as ours, in which the most basic necessities are met and which imports a large proportion of essential materials from other countries, the agricultural sector is constantly having to change its objectives: issues such as a **guaranteed food supply** and the **preservation of natural values** are increasing in importance. On a European level both these issues influenced the recent reforms to the Common Agricultural Policy and both are a source of concern for the majority of citizens within the community.

and conferences, also recognise this concern for the loss of natural values and the deterioration in the quality of food. In short, Western society is continually changing its priorities and as a consequence the agricultural sector is forced to adapt to this social evolution.

In this context, Minorca is no exception, and its agricultural sector will have to confront this change in order to emerge from the crisis with a model adapted to the growing problems of commercialisation.

All agreements that are the result of important meetings, global summits

A promise of mutual help: environmental / alimentative/ economic

What is the Sustainable Agricultural Practices Agreement?

This initiative intends to promote systems of management which will bring the objectives of economic viability within reach (fundamental for the survival of the agricultural sector) by conserving the most basic environmental values (fundamental not only to Minorcan society but also so that the agricultural sector can continue to function in the future) On the one hand it is a sustainable plan for a practice with an economic focus, that will help the viability and survival of that practice. On the other hand it entails the conservation of the environmental value of the plant life, animal life and the countryside itself, which will contribute to the quality of life of the whole population.

The Sustainable Agricultural Practices Agreement is initially a voluntary agreement between two parties: the farm or estate and GOB. Both parties agree to work together to try to achieve the most from a series of measures which have been identified as potentially beneficial not only to economic viability but also to the conservation of natural values.

It is, therefore, about agreements which have been made possible because they come from a belief in the positive aspects to be gained from mutual collaboration, and which are formalised by signing a private agreement adapted to each individual case and according to the type of farm.

For its part GOB promises to work to promote the farm among other entities, both public and private, with the aim of providing aid either directly or by marketing strategies which will benefit the farm.



An initiative between private agents for the sustainability of the agricultural sector in Minorca

Aims and criteria

How are the agreements for Sustainable Agricultural Practices negotiated?

As has already been stated, the agreements for Sustainable Agricultural Practices are voluntary agreements between two parties based on the principle that they are mutually beneficial. Basically, we have on the one hand the businessman farmer, whether he is the owner or not, who works and manages the area and, on the other hand, a body known as the guardian, in this case GOB, dedicated to the conservation of natural values.

The agreement does not preclude the subsequent participation of other agents such as public institutions or businesses in other sectors that may wish to help farms that are under the agreed protection of the guardian.

As stated before, the implementation of the list of measures will allow scope for adaptations and will follow a timetable agreed by both parties. They

can therefore be incorporated into the agreement at a rate permitted by both the measures to be taken and the funding granted.

It will also be possible for the agreement to have a public role- always provided that the parties desire it –through exposure in the media, with the aim of informing the public at large of the proposals and benefits that these initiatives can have for everyone in general.

In order to be informed about the process and guarantee that the measures are appropriate and correctly applied, the agreement will be reviewed on a six monthly basis, and where necessary, adjustments made to those aspects which can be improved.

Measures that are doubly beneficial

As a result of information concerning the philosophy of Protection of the Land, which has been gained from diverse sources, of a workshop held in Minorca attended by interested parties from the agricultural world, of the specific adaptation to what is the reality of our island and of a subsequent review by various parties from both the agricultural and environmental sector, a list of measures to be applied has been agreed which will produce economic as well as environmental benefits.

In total there are 38 measures identified which fall into 5 large groups:

- Type of crops grown
- Management of crops
- Management of stock
- Management of natural elements
- Complementary activities.

The benefits of each of these criteria may be direct or indirect according to whether they are gained from a direct or indirect source. Direct benefits are marked with an “x”, whilst indirect are marked with an (X).



Seeking agreement is essential to make progress together

Socio-economic benefits for the farms

The socio-economic benefits can be direct or indirect according to whether they come from:

- An increase in revenue by means of value-added marketing
- Access to particular funding
- A reduction in costs
- An increase in cultural value

The factors which account for the economic benefits are as follows:

- Diversification of production
- Time-saving
- Increase in cultural value
- Increase in potential for hunting
- Increase in peace and quiet
- Increase in fertility of the land
- Retention of fertile soil
- Protection against the wind
- Protection against pests
- Energy saving
- Possibility of specific funding or subsidies
- Reduction in the use of fertilisers
- Complementary revenue
- Marketing potential
- The availability of water

TABLE OF MEASURES	N.	MEASURES TO APPLY	Diversification of production	Time-saving	Increase in cultural value	Increase in potential for hunting	Increase in peace and quiet	Increase in fertility of the land	Retention of fertile soil	Protection against the wind	Protection against pests	Energy saving	Possibility of specific funding or subsidies	Reduction in the use of fertilisers	Complementary revenue	Marketing potential	The availability of water
Type of crops grown	1	Cultivation of cereals	X			X							(X)				
	2	Sowing of vegetables		X				X						X			
	3	Wild meadows		X				X	X		(X)			X			X
	4	Non use of genetically modified seeds														X	
	5	Planting of individual trees	X		X	X		(X)			(X)		X	X			
	6	Traditional types of market garden	X	X							X		X	(X)			(X)
	7	Traditional types of market orchards	X	X							X						(X)
	8	Traditional types of market fodder	X	X							X						(X)
	9	Unirrigated land		X		X						(X)					X
Management of crops	10	Maintenance of the vegetation layer						X						(X)			
	11	Not ploughing with the slope of the land				X			X								
	12	Crop rotation						X			(X)			(X)			
	13	Daytime harvesting of cereals															
	14	Burying of the residue of harvesting						X						(X)			
	15	Avoiding burning stubble				X			X		X						
	16	Use of organic fertilisers						X						(X)			
	17	Elimination of agricultural plastic											X				
	18	Maintenance of current irrigation ditches							X				X				
Management of stock	19	Establishment of night-time watering of fodder															X
	20	Livestock that is partly free range		X				X									
	21	Use of indigenous breeds	X	X	X			X					X				
Management of natural elements	22	Maintenance of unique trees			X								X		X		
	23	Surrounding wild vegetation			X	X				X	X						
	24	Wild vegetation on hills			X	X			X		X						
	25	Maintenance of small isolated woods			X	X			X		X		X				
	26	Wild vegetation on riverbanks				X			X		X		X				
	27	Maintenance of dead trees				X											
	28	Maintenance of dry stone walls			X	X				X			X				
	29	Maintenance of temporary wetlands				X							X		X		
Complementary activities	30	Renting allotments	X												X		
	31	Maintaining ancient roads and footpaths			X								X		X		
	32	Maintenance of historical heritage			X								X		X		
	33	Commercial cultivation of indigenous plants	X														
	34	Creation of walking routes											(X)		X		
	35	Breeding species of game	X			X											
	36	Installation of beehives	X												X		
	37	Declaration of hunting free areas					X				(X)		(X)		(X)		
	38	Installation of nesting boxes											(X)				

X: Direct Benefits (X): Indirect Benefits

Socio-environmental benefits

In this case the socio- environmental benefits may be direct or indirect based on:

- Preservation of different species of flora and fauna
- Preservation of ecosystems
- Preservation of aesthetic values
- Reduction in threats to the environment
- Reduction in the use of resources

The criteria considered to be most important from an environmental point of view are as follows:

- Benefits for wild fauna
- Benefits for wild flora
- Maintenance of the countryside
- Reduction in the use of toxic products
- Reduction in the use of water
- Reduction in contamination of the aquifers
- Maintenance of fertile soil
- Guaranteed food
- Reduction in pollution

The sustainable farming practices agreement is based on two types of benefit: environmental improvements and economic improvements

TYPE OF MEASURES	N.	MEASURES TO APPLY	Benefits for wild fauna	Benefits for wild flora	Maintenance of the countryside	Reduction in the use of toxic products	Reduction in the use of water	Reduction in contamination of the aquifers	Maintenance of fertile soil	Guaranteed food	Reduction in pollution
Type of crops grown	1	Cultivation of cereals	x			(x)	x				
	2	Sowing of vegetables				(x)	(x)	x	x		
	3	Wild meadows	x	x	x	x	x		x		
	4	Non use of genetically modified seeds		x		(x)				x	
	5	Planting of individual trees	x		x						
	6	Traditional types of market garden				x	x	x			
	7	Traditional types of market orchards				x	x	x			
	8	Traditional types of market fodder				x	x	x			
	9	Unirrigated land				(x)	x	x			
Management of crops	10	Maintenance of the vegetation layer				(x)	(x)	(x)	x		
	11	Not ploughing with the slope of the land							x		
	12	Crop rotation				(x)	(x)	(x)	x		
	13	Daytime harvesting of cereals	x								
	14	Burying of the residue of harvesting				(x)		(x)	x		
	15	Avoiding burning stubble		x	x				x		
	16	Use of organic fertilisers				(x)		(x)	x		
	17	Elimination of agricultural plastic			x				x		x
	18	Maintenance of current irrigation ditches							x		
Management of stock	19	Establishment of night-time watering of fodder					x				
	20	Livestock that is partly free range	x		x					x	
	21	Use of indigenous breeds			x	(x)	(x)	(x)		x	
Management of natural elements	22	Maintenance of unique trees			x						
	23	Surrounding wild vegetation	x	x	x	(x)			x		
	24	Wild vegetation on hills	x	x	x	(x)			x		
	25	Maintenance of small isolated woods	x	x	x	(x)			x		
	26	Wild vegetation on riverbanks	x	x	x	(x)			x		
	27	Maintenance of dead trees	x						x		
	28	Maintenance of dry stone walls	x	x	x						
	29	Maintenance of temporary wetlands	x		x						
Complementary activities	30	Renting allotments	x								
	31	Maintaining ancient roads and footpaths			x						
	32	Maintenance of historical heritage			x						
	33	Commercial cultivation of indigenous plants				x	x	x			
	34	Creation of walking routes			x						
	35	Breeding species of game	x								
	36	Installation of beehives		x	(x)						
	37	Declaration of hunting free areas	x								
	38	Installation of nesting boxes	x								

X: Direct Benefits (X): Indirect Benefits

Criteria and schedule for applying the measures

All the **proposed measures** are detailed in section C of this document. Each Agreement will require a certain degree of adjustment to suit the needs of individual farms and agricultural practices.

The measures in the section Management of Natural Elements N^{OS} 22 to 29 apply to all farms and must be put into practice from when the agreement is signed, provided that they do not affect the economy of the agricultural practice itself or the preservation of natural values.

The measures included in the section Type of Crops, Management of Crops and Management of Stock will be applied according to the type of use, whether it be animals, agricultural, cultivation of vegetables or fruit, with a timetable agreed by both parties to implement such measures but always within a maximum timescale of two years.

The section Complementary Activities from 30 to 38 refers to voluntary measures proposed as activities or ideas which complement the revenue of the farm and so improve its profitability.



Measures and benefits derived from specific sources

Type of crops

1·CULTIVATION OF CEREALS. The cultivation of cereals results in a diversification of production and can be eligible for public funding. It has very a positive effect on wildlife and directly increases the number of species which are hunted.

2·SOWING OF VEGETABLES. Vegetables help maintain nitrogen levels and so improve the fertility of the soil. They reduce the need for chemical fertilisers and therefore save time.

3·WILD MEADOWS. The maintenance of wild meadows is advantageous to wildlife both animal and vegetable. It increases resistance to pests, maintains the fertility of the soil and helps retain rainwater. It saves time and the cost of fertilizers.

4· NON USE OF GENETICALLY MODIFIED SEEDS. The use of modern genetically modified seeds has created alarm amongst a large proportion of the scientific world, because of the potential dangers they can represent for wild plant life and the surrounding cultivated areas. This concern also affects aspects of human health and the confidence that consumers have in this type of product.

5·PLANTING OF INDIVIDUAL TREES. The planting and maintenance of individual trees can provide a nesting site and a source of food for certain species of birds which, in turn, can act as natural pest controllers. Trees also contribute to the diversity of the landscape and can provide protection against the sun in Summer, the wind and the rain. In some cases they enhance diversity of production, given that their fruits can be an alternative food source for various types of livestock; they can also help increase soil fertility, as in the case of the carob tree which contributes nitrogen.

The effects of genetically modified products on the environment are still unknown

management of crops

6-TRADITIONAL TYPES OF MARKET GARDEN, 7 ORCHARDS 8 FODDER.

All these traditional varieties are types of cultivation adapted to the climate, rainfall and pests in the area where they are situated. They are, therefore, types of cultivation that need less in terms of pesticides, water and time. They can also be a complementary source of revenue as they are eligible for funding to promote diversification.

9-UNIRRIGATED LAND. This type of land is suited to Minorca's dry climate and does not use the amount of water required by irrigated land. It helps save time in terms of management and reduces the risk of contaminating the aquifers, as usually happens in areas that are intensively irrigated. Unirrigated land promotes diversification of wild fauna and generally benefits species which are hunted.

The transformation of unirrigated land into irrigated land can give short term benefits but, in the long term can lead to a situation which is economically unsustainable



10-MAINTENANCE OF THE VEGETATION LAYER.

Maintaining the vegetation layer, especially in Winter, guarantees soil fertility, avoids the dangers of soil erosion, and minimises the need for pesticides, as it maintains the natural equilibrium between species.

11-NOT PLOUGHING WITH THE SLOPE OF THE LAND.

The loss of fertile soil is one of the main problems that an agricultural estate has to try and combat. The practice of ploughing the soil so that rainwater can more easily carry earth towards rivers and the sea must be avoided, because of the negative economic and environmental effects it entails.

12-CROP ROTATION.

The system of crop rotation has been proven to prevent soil depletion so allowing it to regain strength and fertility. Therefore, indirectly it means a saving in fertilizers and pest control by maintaining the good health of the soil.

13-DAYTIME HARVESTING OF CEREALS.

Some species of birds nest in the crops so if harvesting is done at night they have less opportunity to escape the machines. When harvesting is carried out by day, the farmers themselves can see the birds and give them time to escape.

14-BURYING OF THE RESIDUE OF HARVESTING.

All the nutrients remaining in the residues of harvesting can be used to form part of the layer of top soil with one simple act of ploughing. It is therefore a good way to maintain soil fertility and at the same time avoids the cost of chemical fertilizers.

15·AVOIDING BURNING STUBBLE. The desire to incorporate nutrients by burning off stubble effectively means that many of these nutrients are lost due to the action of the wind or rain. Moreover, burning stubble can greatly change the microscopic life of the earth and is a source of unwanted fires, which affect the landscape and can incur a fine or other sanctions.

16·USE OF ORGANIC FERTILISERS. The use of organic fertilisers, which by their very nature are balanced, represents a saving in costs when compared to chemical fertilisers and do not pollute the underground aquifers.

17·ELIMINATION OF AGRICULTURAL PLASTIC. Plastic used to prevent the growth of weeds is practically impossible to remove once it has become embedded beneath the ground. The practice of ploughing directly on top of plastic pollutes the soil with a product which heats and impoverishes it. However, a plastic

made from corn starch has been produced recently which is bio degradable and easily reabsorbed into the ground.

18·MAINTENANCE OF CURRENT IRRIGATION DITCHES. The maintenance of irrigation ditches which channel water in the case of heavy rainfall prevents the loss of fertile soil. This maintenance needs to be compatible with preserving the landscape and the natural life which some ditches are home to.

19·ESTABLISHMENT OF NIGHT-TIME WATERING OF FODDER. Night -time watering means that fresh water is used more effectively since it is not evaporated by the sun, and therefore represents a direct saving in terms of water and energy consumption.

The traditional minorcan system of sowing has been one of the greatest allies in the conservation of the natural values of the island's landscape.



managing livestock

20·LIVESTOCK THAT IS PARTLY FREE RANGE.

Livestock grazing in partial freedom saves much time in terms of management. It helps improve the fertility of the soil and has positive effects not only on the countryside but also guarantees an improved source of food.

21·USE OF INDIGENOUS BREEDS. These are animal species which have adapted to the conditions of the island and therefore need less attention. The management of indigenous breeds is more in tune with nature and can improve the quality of food. Public funding is available to encourage the rearing and farming of such breeds.



Livestock rearing has always been a traditionally sustainable practice



management of natural elements

22·MAINTENANCE OF UNIQUE TREES. These are trees or shrubs which, because of their age have grown to a considerable size .They have a certain cultural value not only genetically but also because they are a unique feature of the landscape, and could be the focus of organized visits.

23·SURROUNDING WILD VEGETATION.The practice of leaving a certain amount of wild vegetation surrounding an area of cultivated land is advantageous as it is a natural means of pest control, gives protection from the wind, and enhances the landscape. It also benefits wild flora and fauna, the countryside and species which are hunted.

24·WILD VEGETATION ON HILLS. In addition to the positive effects of the previous measure, this practice is very useful in that it protects crops from the erosive effects of torrential rain. The natural vegetation acts as a brake on the water so that it is reduced in strength thus less earth is washed away.

25·MAINTENANCE OF SMALL ISOLATED WOODS. Small woods are areas of vegetation which are a great help to wildlife, which in turn helps control pests naturally. They are also beneficial to the land, protect neighbouring crops and nurture species that are hunted.

26·WILD VEGETATION ON RIVERBANKS. As well as having positive effects on the flora and fauna, vegetation growing by rivers can help control flash floods which could wash away fertile soil. It also plays an important part in preserving the landscape.

Maintaining wild vegetation creates a natural balance and acts as a natural form of pest control

27·MAINTENANCE OF DEAD TREES. Leaving trees where they fall or die means that, during the process of putrification ,numerous species of invertebrates and insects can feed on their remains, the end result of which enriches the soil with important organic nutrients and maintains the natural food chain between species.

28·MAINTENANCE OF DRY STONE WALLS. The network of dry stone walls characteristic of the Minorcan landscape greatly supports the biodiversity of flora and fauna and was one of the key elements which endorsed Minorca's declaration as a Biosphere Reserve. The walls also help provide shelter for crops from the wind and funds can be made available for their upkeep.



Natural elements form a part of our natural and cultural heritage

29·MAINTENANCE OF TEMPORARY WETLANDS. Temporary wetlands, whether they are natural or not, are home to a wide variety of microorganisms, very important for the proper development of other larger species. They are often essential in supporting some endangered species such as the toad. Temporary wetlands are pleasing to the eye and help support species that are hunted.

complementary activities

30·RENTING ALLOTMENTS. The growing demand for small areas of land to be used as allotments by town dwellers could be an alternative source of income for many farms.

31·MAINTAINING ANCIENT ROADS AND FOOTPATHS. The maintenance of secondary roads is one way to reclaim part of the landscape and cultural heritage. Funding can be available for the reclamation and maintenance of these roads; in some cases they could be used by ramblers.

32·MAINTENANCE OF HISTORICAL HERITAGE. As in the previous case, landscape and heritage in their different forms can be an alternative source of revenue for farms.

33·COMMERCIAL CULTIVATION OF INDIGENOUS PLANTS. Indigenous or traditional plants are those which have adapted to the soil and therefore need less attention since they need less water and less fertilisers. With the appropriate sort of marketing they could enhance diversity of production.

34·CREATION OF WALKING ROUTES. Another possible source of income for farms, which combine nature and culture.

35·BREEDING SPECIES OF GAME. In the case of estates or farms with hunting grounds rented out to third parties or with other alternative hunting activities, breeding and repopulating native species of game is a way of maintaining this resource without exhausting it.

Hunting free zones are another way of managing wild fauna



Protection: an opportunity for the future of the biosphere reserve:

36·INSTALLATION OF BEEHIVES. When bees produce honey they pollinate different plants so ensuring the biodiversity of the flora in the area. If marketed correctly this could be an interesting alternative source of income for the farm.

37·DECLARATION OF HUNTING FREE AREAS. This is set out in the **Hunting Law** (la Ley de Caza), and allows areas to be protected from all types of hunting activity. Funding is available if the areas fall within the **Land Stewardship Agreement**. In terms of quality of life, the resulting peace and quiet of such areas is to be treasured.

38·INSTALLATION OF NESTING BOXES. The lack of places suitable for nesting is one of the reasons for the reduction in the number of species that help control pests. With this in mind, nesting boxes specially adapted to suit different types of birds can be installed in suitable locations and could have positive results.



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