Livestock grazing management

Goal	Adoption of a grazing strategy that allows for biodiversity in extensive systems.
Target group	Farmers or advisors managing cattle or other ruminants in extensive systems with pastures.
Description of the measure	A maximum grazing livestock density of 1.4 LU/ha of fodder surface should generally be respected, in accordance with the limit used to define extensive livestock farming and to define the eligibility to receive support for the application of extensive measures (Piva et al., 1999). In special circumstances, such as farming in High Nature Value areas, other limits should be considered (Boccaccio et al., 2009; Mountford and Peterken, 2003; Plieninger et al., 2015). Farms with higher stocking densities must work towards a reduction of density values in order to match this limit within a given period. Farms with lower stocking densities should hold these lower densities. Overall, livestock density values should be subject to a continuous reduction over time until the optimum level is reached. Management plans should include adequate grazing strategies and patterns, reducing the impact on the grassland and on biodiversity. Three basic grazing systems that may be adopted are: a) continuous (the pasture is not divided in sub-pastures or paddocks and the livestock is allowed to graze all the pasture area at any given time); b) rotational (the pasture is divided into sub-pastures or paddocks, using appropriate mobile and wildlife-friendly fences, and the cattle is allowed to graze each paddock for an adequate time period before being moved); and c) ultra-high density, mob grazing and flash-grazing (usually in the morning, high livestock densities are allowed in a pasture for invasive species control but may also later be moved according to a rotation system). When invasive and undesired grassland species are to be controlled, applying flash-grazing is preferred to mechanical or chemical control methods. If an overall livestock density reduction is not viable, the application of rotational grazing is recommended. In order to ensure tree regeneration while halting the encroachment of dense shrub cover in wood-pasture systems, it is advisable to allow for time and space gaps between grazing activities.
Suitable sites	▪ Farms with natural, permanent, semi-natural and sown pastures where cattle or other ruminants are kept and reared (in extensive systems).
How a good implementation looks like	▪ High levels of biodiversity are observed in and around the grasslands that comprise the pasture areas; ▪ Native plant species are observed as well as wild animal species that make use of that vegetation; ▪ No signs of soil compaction, erosion and degradation are observed; ▪ No signs of scrub and woodland invasion of the grasslands and meadows;

	▪ High soil fertility.
Effects on biodiversity (ecosystems, species, soil biodiversity)	 European plant species, native to the regions where the farm is located, are present and can be observed. Examples of common species associated with grasslands, in Europe, include the maidenstears (*Silene vulgaris*) or the common poppy (*Papaver rhoeas*) among many others. In some regions, the presence of endemic species of wild flowers may be viable through adequate grazing.
Other positive effects/benefits for the farmer	▪ The presence of more pollinating species or larger populations of these species may benefit other crops present in the farm; ▪ Less compacted, less eroded soil, benefiting from the action of soil bacteria and invertebrates, may exhibit higher levels of fertility and productivity; ▪ An optimum, intermediate level of grazing can maximize primary production and hence stocking rate.
Indicator/key data	▪ Existence of a grazing management plan and/or strategy with designated grazing system; ▪ Observable livestock densities below equal to or less than 1.4 LU/ha of fodder surface; ▪ Observable presence of native wild plant and animal species, as expected for the biogeographic region in question.
Risk and further recommendations	▪ Sensitivity to herbivory and the consequential positive or negative effects of grazing, for many plant species, depends upon the timing of defoliation; ▪ The introduction of grazing, as well as the removal of grazing from a specific area, may constitute a disturbance, triggering rapid successional changes which may be heterogeneous and unpredictable at the species level; ▪ Grazing may significantly alter the competitive balance among species (favouring shorter subdminant species in detriment of taller dominants). ▪ The assessment and monitoring of pasture dynamics, livestock spatial location and grazing pressure are recommended.
Timeframe (When to start a measure and anticipated time for implementation)	Grazing systems are to be applied whenever the animals are given access to the pastures. The graze–rest periods depend on the type of grazing system adopted but may be planned for the whole year.
Additional special resources/ equipment/ skills needed	▪ The selection and design of a grazing plan and/or strategy may require technical advice; ▪ The identification of native wild plant and animal species may also require technical assistance; ▪ The registry of location and movement of animals using modern imaging and communication technologies is an option for the effective assessment and moni-

	toring of pasture dynamics, livestock spatial location and grazing pressure.
References	▪ Boccaccio, L., Brunner, A., Powell, A., 2009. Could do better - How is EU Rural Development policy delivering for biodiversity? BirdLife International, Brussels. ▪ Mountford, E.P., Peterken, G.F., 2003. Long-term change and implications for the management of wood-pastures: experience over 40 years from Denny Wood, New Forest. For. An Int. J. For. Res. 76, 19–43. ▪ Piva, G., Bertoni, G., Masoero, F., Bani, P., Calamari, L., 1999. Recent progress in animal production science. Proceedings of the Aspa 13th Congress (Piacenza, 21-24 June 1999). FrancoAngeli, Milan, Italy. ▪ Plieninger, T., Hartel, T., Martín-López, B., Beaufoy, G., Bergmeier, E., Kirby, K., Montero, M.J., Moreno, G., Oteros-Rozas, E., Van Uytvanck, J., 2015. Wood-pastures of Europe: Geographic coverage, social–ecological values, conservation management, and policy implications. Biol. Conserv. 190, 70–79. ▪ Silva, J.P., Toland, J., Jones, W., Eldridge, J., Thorpe, E., O'Hara, E., 2008. LIFE and Europe´s grasslands - Restoring a forgotten habitat. Office for Official Publications of the European Communities, Luxembourg.

Further information: Knowledge pool

This Action Fact Sheet belongs to the training package for advisors of standard organisations and companies and was developed within the project: "Biodiversity in Standards and Labels of for the Food Industry". The main objective of the project is to improve the biodiversity performance of standards and sourcing requirements in the food industry by helping standard organisations to integrate efficient biodiversity criteria into their schemes and motivating food processing companies and retailers to include comprehensive biodiversity criteria into their sourcing guidelines.

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