

Optimising grass supply, labour, economy and mind-set to create added value from grazing

A. van den Pol-van Dasselaar

Aeres University of Applied Sciences, Dronten, the Netherlands

Corresponding author: a.van.den.pol@aeres.nl

Sammanfattning

Betesdrift ger många fördelar för jordbrukarna och samhället i stort. Trots att ekosystemtjänsterna uppskattas mycket av samhället är de sällan tillräckligt belönade. I denna uppsats diskuteras ämnen som kan skapa mervärde från betesdrift genom optimering av tillgången på vall, arbetskraft, ekonomi och tänkesätt. Nya lovande affärsmodeller presenteras, där jordbrukarna blir ekonomiskt belönade för de mervärden de bidrar med. Ett exempel ges på ett lätt tillämpbart betessystem, "New Dutch Grazing" (Ny holländsk betesdrift), som optimerar arbetskraft och vallutnyttjande. Slutligen diskuteras betydelsen av jordbrukarnas attityd. Jordbrukarna är nyckelaktörer när det gäller att underhålla och förbättra betessystemen eftersom de bestämmer över gårdens dagliga drift. Detta är viktigt att beakta när man utvecklar stimulansåtgärder. Speciellt viktigt är det att uppmärksamma unga jordbrukare, eftersom de representerar nästa generations jordbruk.

Abstract

Grazing provides multiple benefits to farmers and to the wider society. While the ecosystem services provided to society are certainly appreciated, they are thus far hardly rewarded. This paper discusses topics related to creating added value from grazing by optimising grass supply, labour, economy and mind-set. New promising business models are presented, in which farmers are financially rewarded for their added value contributions. An example of a grazing system that is easy to implement is given, the "New Dutch Grazing", which optimises labour and grass utilisation. Finally, the importance of the mind-set of the farmer is discussed. Farmers are key actors when it comes to maintaining and improving grazing systems since they decide on the day-to-day management on the farm. When developing stimulating initiatives, this should be taken into account. Special attention should be paid to young farmers since they represent the next generation of farming.

Introduction

Grazing is important for the human population, since ruminants deliver food for humans as they convert the human inedible plant biomass from grasslands via grazing into high quality edible proteins. Thus, by providing feed to ruminants, grasslands contribute to the feeding of mankind. Additionally, grass-based ruminant production delivers a number of other services to society, like carbon (C) sequestration (e.g. Conant *et al.*, 2017) and biodiversity (e.g. Isselstein *et al.*, 2005; Plantureux *et al.*, 2016). These services indeed provide multiple benefits to the wider society, but it is the individual farmer that needs to maintain these benefits by maintaining the grasslands. While the services are certainly appreciated by society, they are thus far hardly rewarded.

This paper discusses topics related to creating added value from grazing by optimising grass supply, labour, economy and mind-set:

- New business models
- Optimising grass supply and labour in a new grazing system: New Dutch Grazing
- Mind-set of the farmer

New business models

In the past, additional services, like the ecosystem services provided by grasslands, were not specifically rewarded by society, which was used as rationale for government interventions and associated taxes, subsidies and regulations. It is interesting to see that in recent years, a number of societal initiatives has started to support the farmer in maintaining grasslands and grass-based production systems:

- Treaties (formal agreements between stakeholders)
- Premiums (prizes, bonuses, or awards given as inducements)
- Market concepts and differentiation of products (constructs to promote products)

These societal initiatives are illustrated by a few examples. The Netherlands provide a good example of the first two categories (treaties and premiums). In Dutch politics and society, there is a broad interest to promote cows having access to pasture. The grazing dairy cow is seen as part of the cultural heritage of the Netherlands, and the Dutch society has expressed its concern about less grazing. As a consequence, a "Treaty on Grazing" was initiated by a number of organisations in the full dairy chain to reverse this trend. By now, this Treaty, which aims to stabilise the percentage of farms that practise grazing, has been signed by more than 80 organisations, including farmer organisations, industry (e.g. feed and milk robot industry), education, NGO's, government and research. As part of the Treaty, many stimulating initiatives took place. The most prominent one was the introduction of a grazing premium that is provided by the dairy industry to farmers that practise grazing for at least 120 days per year for at least six hours per day. This initiative has been followed in other countries. For example, since 2016 there is also a German "Grazing Charta". The German farmers that produce pasture milk also get a premium. In several other countries, like Spain, France and Belgium, premiums are paid to farmers in certain regions that practise grazing or maintain grasslands. The institutions that pay for these premiums can be very different, from consumers to industry to government. In Switzerland, for example, the government provides premiums to farmers that deliver certain ecosystem services. This is on a voluntary basis; each farmer can decide whether or not to comply with the programme. In Portugal, a Carbon Fund was established, paying farmers for delivering the ecosystem service C sequestration (Teixeira *et al.*, 2015). Finally, in many countries there are initiatives that relate to the quality of the animal products produced and associated market concepts. Local products are promoted as authentic and marketed as such leading to premium prices for farmers. All these initiatives have led to "new" business models where farmers are rewarded either for animal production or for societal demands or for both.

New Dutch Grazing: a method to optimise grass supply and labour

The grazing system "New Dutch Grazing" was developed a few years ago in the Netherlands as a system that combines high grazing efficiency with ease of labour in dairy systems. It can easily be used in situations of high stocking rates and large milk productions per cow but also in other situations. New Dutch Grazing, which is also referred to as "compartmented continuous grazing" is an adapted set-stocking system for stocking rates up to 10 animals per ha in which the cows rotate on a daily basis between six compartments on one platform (which is the total area where the animals can graze). The approach consists of three steps. First (and usually only once), the grazing platform is divided in a number of equal-sized paddocks and investments in infrastructure are done to facilitate grazing: water, roadways, fencing, etc. Second, every 4–6 weeks, the paddocks that were set for mowing are mowed. Third, cows are moved each day to a new compartment and in a period of 5–6 days, they rotate on five or six compartments. The (variable) sixth compartment is cut for silage to increase sward utilisation. Therefore, cows come back in the same compartment after 5–6 days. The average grass height in the compartments is kept constant (8–12 cm) so that daily regrowth is available for intake. The gap between daily regrowth and animal demand is filled with supplementation. If the grass is too long, less supplementation is given. If the grass is too short, more supplementation is given. The system is easy to implement, can be done on every farm, does not require a lot of labour / management skills and gives good result with respect to milk production and grass utilisation. The area on the farm that is available for grazing will be optimally used with this grazing system.

The farmer as a focal point: the importance of the mind-set of the farmer

A final aspect to discuss is the mind-set of the farmer. Farmers are key actors when it comes to maintaining and improving grazing since they decide on the day-to-day management on the farm (Van den Pol-van Dasselaar *et al.*, 2018). It is the farmer that decides on the future of grazing. From on-farm participatory research and analysis of basic motivational drivers of European farmers, it is known that personal values, preferences, experiences and habits of farmers are very important in management decisions (e.g. Kristensen *et al.*, 2010; Reijs *et al.*, 2013; Baur *et al.*, 2016; Becker *et al.*, 2018). This is linked to the human tendency to avoid cognitive dissonance. When confronted with an advice which implies another behaviour or management, farmers (like every human person) experience cognitive dissonance. Cognitive dissonance centres around the idea that if a person knows various things that are not psychologically consistent with one another, he or she will, in a variety of ways, try to make them more consistent (Festinger, 1962). Cognitive dissonance can be reduced by a change of opinion, a change of behaviour, a change of perception or a combination of these. This implies that farmer education is very important. Special attention should be paid to the young farmers, since the future of grassland farming in Europe is in the hands of young farmers (Van den Pol-van Dasselaar *et al.*, 2019). Education provides farmers knowledge, analytical tools and technical skills that allow them to be more independent in their judgement.

Conclusion

Grazing provides multiple benefits to farmers and to the whole of society. To support farmers, farmers need new business models to be rewarded for the added value they provide. Furthermore, optimising the grazing system at farm level will be profitable for the farmer. Easy to implement systems, like "New Dutch Grazing" can be useful in this respect. It is clear from research and practice that the mind-set of the farmer is relevant for the on-farm decisions

about grassland management. Farmer education is therefore important. Indeed, the students of today are the farmers and farm advisors of the future, and as such, they determine the future of grazing.

The presentation was partly funded by the European Agricultural Fund for Rural Development.

References

- Baur I., Dobricki M. and Lips M. (2016) The basic motivational drivers of northern and central European farmers. *Journal of Rural Studies* 46 (Supplement C), 93–101.
- Becker T., Kayser M., Tonn B. and Isselstein J. (2018) How German dairy farmers perceive advantages and disadvantages of grazing and how it relates to their milk production systems. *Livestock Science* 214, 112–119.
- Conant R.T., Cerri C.E.P., Osborne B.B. and Paustianm K. (2017) Grassland management impacts on soil carbon stocks: a new synthesis. *Ecological Applications* 27, 662–668.
- Festinger L. (1962) Cognitive dissonance. *Scientific American* 207, 93–107.
- Isselstein J., Jeangros B. and Pavlů V. (2005) Agronomic aspects of biodiversity targeted management of temperate grasslands in Europe – A review. *Agronomy Research* 3, 139–151.
- Kristensen T., Madsen M.L. and Noe E. (2010) The use of grazing in intensive dairy production and assessment of farmers' attitude towards grazing. *Grassland Science in Europe* 23, 964–966.
- Plantureux S., Bernués A., Huguenin-Elie O., Hovstad K., Isselstein J., McCracken D., Therond O. and Vackar D. (2016) Ecosystem services indicators for grassland in relation to ecoclimatic regions and land use systems. *Grassland Science in Europe* 21, 524–547.
- Reijs J.W., Daatselaar C.H.G., Helming J.F.M., Jager J. and Beldman A.C.G. (2013) Grazing dairy cows in North-West Europe: economic farm performance and future developments with emphasis on the Dutch situation. LEI Wageningen UR, Wageningen, 124 pp.
- Teixeira R.F.M., Proença V., Crespo D., Valada T. and Domingos T. (2015) A conceptual framework for the analysis of engineered biodiverse pastures. *Ecological Engineering* 77, 85–97.
- Van den Pol-van Dasselaar A., Becker T., Botana Fernández A., Hennessy T. and Peratoner G. (2018) Social and economic impacts of grass based ruminant production. *Grassland Science in Europe* 23, 697–708.
- Van den Pol-van Dasselaar A., Bastiaansen-Aantjes L.M., Bogue F., O'Donovan M. and Huyghe C. (eds.) (2019) Grassland use in Europe, a syllabus for young farmers. ISBN: 978-2-7592-3145-4. Quae Éditions, 263 pp. <https://www.quae-open.com/produit/123/9782759231461/grassland-use-in-europe>
<https://doi.org/10.35690/978-2-7592-3146-1>