

CASE STUDY

“GRASS-FED BEEF” (ESTONIA)

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1 Introduction: What is the case study about?

This CS is about the private initiative – whole chain approach (production-processing-marketing) of grass-fed beef led by farmers NGO Liivimaa Lihaveis (Beef of Livonia), promotion of consumption of grass-fed beef and environmental benefits related to this, e.g. management of grasslands, including biodiversity-rich semi-natural grasslands.

NGO Liivimaa Lihaveis, the only NGO of its kind, established in 2010, is a non-profit organisation led by producers of beef cattle from different Estonian regions. NGO was established by 11 producers of Aberdeen Angus, Hereford and Simmental breed beef cattle, since 2014 all members are also certified organic. NGO unites individual farmers and agricultural companies, different in terms of farm size and production volume: from smaller farms with about 50 animals, up to big farms with 2000 hectares of land and up to 400 beef cattle animals.

In 2010 some founders of the NGO established also private limited company (Nordic Beef) which main function became distribution of grass-fed beef meat.

Main aim of the approach is to be independent from mainstream processing and marketing system and to give more added-value to their products as well as to offer better price for their members and related producers.

NGO Liivimaa Lihaveis and Nordic Beef are the owners of officially registered trade mark “Liivimaa Lihaveis” under which the products are sold in different retail channels and provided to restaurants/cafes and some schools. Recently they started introducing the products also in hotel/restaurant/café (HoReCa) sector of Latvia and Sweden. Liivimaa Lihaveis is cooperating with more than 20 well-recognised Estonian, Latvian and Swedish chefs. Very high attention is paid on increasing the consumer’s awareness and of benefits related to this type of production.

Figure: Logo of Liivimaa Lihaveis.



In 2014, NGO Liivimaa Lihaveis initiated and developed national food quality scheme “Grass-fed beef”.

Figure: Logo of grass-fed beef quality scheme



Figure: Products of “Liivimaa Lihaveis” brand.



Photos: Liivimaa Lihaveis

Another 30 organic farms/enterprises have joined the officially approved “Grass-fed beef quality scheme”, since 2014, thus the total number of farms part of the quality scheme and marketing their products under trademark “Liivimaa Lihaveis” is 41 (June 2016, see Figure 1)¹.

The total area of organically managed farmland of these 41 farms is about 13 900 hectares, including about 12 600 hectares of grasslands (mostly permanent grasslands), of which about 2 200 hectares are semi-natural habitats (about 7% from total area of managed semi-natural habitats in Estonia) located mainly on Natura 2000 areas. Farms of grass-fed beef quality scheme have in total more than 5400 beef cattle animals (about 8% of total number of Estonian beef cattle).

Approach unites only extensive grass-fed beef producers. According to grass-fed beef quality scheme developed by NGO (http://www.liivimaalihaveis.ee/files/Quality_Scheme.pdf), beef cattle of members of the quality scheme should be grazed throughout grazing season and

¹ In the following text “Liivimaa Lihaveis” is used for simplicity, but it consists of NGO Liivimaa Lihaveis (production), private limited company Nordic Beef (distributor) owned by some members of NGO, and all farms belonging to grass-fed beef quality scheme and marketing their products under trademark of “Liivimaa Lihaveis”.

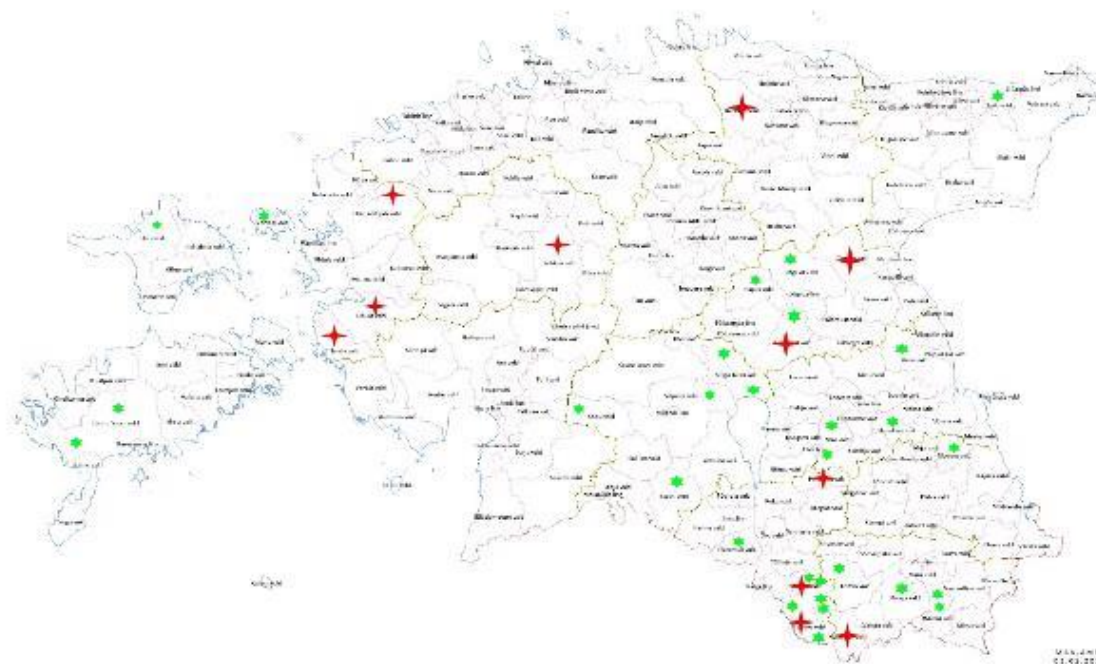
silage and hay (but not grain) is only fed during the winter period. 50% of pastureland used for grazing should be permanent (not ploughed or cultivated).

Figure: Beef cattle of Liivimaa Lihaveis on grassland.



Photo: Liivimaa Lihaveis

Figure: Location of NGO Liivimaa Lihaveis (red) and farms joined grass-fed beef quality scheme (green). Source: own compilation.



For better understanding of the context, it is important to mention that production and consumption of beef (and in particular grass-fed beef cattle breeds) has not been traditionally



common in Estonia. Production of beef cattle started more widely in Estonia only about 15-20 years ago.

ESBO focus, potential benefits and synergies

Case study is focussing mostly on environmentally and socially beneficial outcomes (ESBOs) under broad categories of:

- 1) **high levels of biodiversity** and
- 2) **protecting landscape character and cultural heritage** and
- 3) **preserving and enhancing rural vitality.**

As farm animal welfare standards are higher in organic farming compared to conventional agriculture CS is related also to achieving the implementation of **high farm animal welfare** practices on farms (Table 2).

Achieving (or maintaining) the **presence of diverse and sufficiently plentiful species and habitats (ecological diversity)** by this case is reached mostly through *management of semi-natural habitats but also through management of permanent grasslands*. Farms part of this system are managing more than 12 000 hectares of grasslands, from which significant area (about 2000 hectares in total) are semi-natural habitats which are very threatened habitats all over Europe and can only remain if mowed or grazed according to certain requirements (see also section 3.2).

Management of (semi-natural) habitats has great value also for **protecting landscape character and cultural heritage**. Management of grasslands helps to preserve traditional open agricultural landscapes. Especially semi-natural habitats embody signs of previous human activity and heritage like stone walls, pasture roads, old barns, etc., which are all related to “sense of place” for the rural population (Talvi, T. and Talvi, T., 2012).

Activities of this approach are also related to **preservation and enhancement of rural vitality**. Members of Liivimaa Lihaveis and quality scheme provide employment for local people who otherwise might leave the countryside and the higher price they get helps to sustain the production. Cooperation with local caterers helps to sustain local businesses. Beef cattle breeding is also important for sustaining agricultural practices, knowledge and traditions of agriculture and animal breeding.

As farms belonging to the grass-fed beef quality scheme are all certified organic – agrochemicals like pesticides and synthetic fertilisers are not used and this contributes to achieving *water quality*. In organic farming also greater attention is paid to *soil functionality*.

Rising of consumers` awareness, co-operation with chefs, study trips and training of farmers will achieve (or maintain) a *good level of educational and demonstration activities in relation to farming and forestry*.

As quite significant area of grasslands is managed by the farms joined the quality scheme, case is significant also in order to achieve *climate change mitigation* objectives through carbon storage in these grasslands.

Obviously, the case is also related to sustainable and *sufficient production of food, timber and energy*.



Table: ESBOs provided/potentially provided by the CS

Main ESBOs provided/potentially provided by the CS	
Broad categories of objectives to be achieved	ESBOs [and dominant dimension]
High levels of biodiversity	Species and habitats: Achieving (or maintaining) the presence of diverse and sufficiently plentiful species and habitats (ecological diversity) [Environmental]
Protecting landscape character and cultural heritage	Landscape character and cultural heritage: maintaining or restoring a high level of landscape character and cultural heritage [Social and environmental]
Preserving and enhancing rural vitality	Rural vitality: Achieving (or maintaining) active and socially resilient rural communities [Social]
High levels of farm animal welfare	Farm animal welfare: achieving (or maintaining) the implementation of high farm animal welfare practices on farms [Social and environmental]
Other ESBOs linked to CS	
Sustainable and sufficient production of food, timber and energy	Maintenance/increase of a sustainable resource base as a means to secure long term capacity of the land to produce food/fibre etc. [Economic, social, environmental]
Healthy, functioning soils	Soil functionality: Achieving (or maintaining) good biological and geochemical condition of soils [Environmental and social]
High water quality and ensuring water availability	Water quality: Achieving (or maintaining) good ecological status of surface water and good chemical status of groundwater [Economic, environmental and social]
Climate change mitigation objectives	Carbon sequestration/storage: Achieving (or maintaining) maximisation of carbon sequestration and storage [Environmental]
Public recreation, education and health	Educational activities: Achieving (or maintaining) a good level of educational and demonstration activities in relation to farming and forestry [Social]

2 Definition of the social-ecological system (SES) studied

2.1 Figure of the SES, using the SES Framework

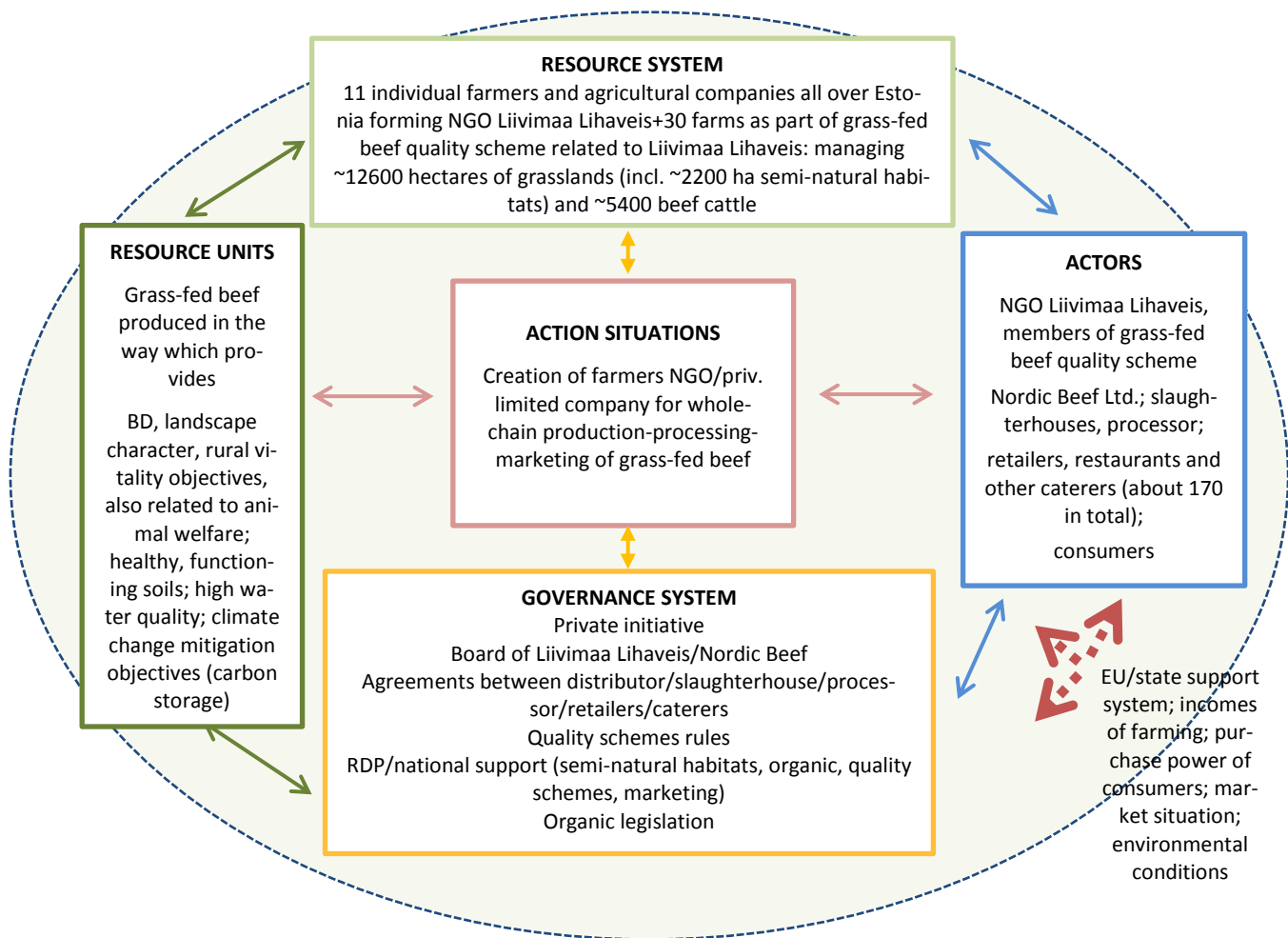


Figure: CASE STUDY “Grass-fed beef”

2.2 Short characterisation of key drivers/motivations

Approach is **market driven**. According to representative of Liivimaa Lihaveis: “Market situation in 2010 was unfavourable and price provided by market leader of Estonian meat industry and holder of trademark “Estonian Beef” was very low (like for cull cows), breeds of Angus and Hereford did not meet the requirements dictated by the industry thus it was economically unprofitable to sell the animals there. We wanted to be independent from manufacturing pricing decisions and provide more value-added and diversified production”.

High share of grasslands, especially semi-natural habitats, in Estonia and in all farms who founded Liivimaa Lihaveis was considered as a good argument for differentiation and marketing and together with organic certification this ensures the highest possible price.

They are organising the whole value-chain from production to marketing, independently controlling the whole process. For increasing the consumer’s awareness about grass-fed beef and on benefits related to this type of production web-site of Liivimaa Lihaveis is being developed



(www.liivimaalihaveis.ee), video-clips about grass-fed beef production and semi-natural habitats as well as about cooking the meals from this meat are created. In 2015, “Beef Month” in 40 Estonian restaurants was organised as well as grilling-contest of beef. Liivimaa Lihaveis took part also from the yearly competition of “Best Estonian Organic Producer and Product”, in 2015, and one of their products won the “Best Organic Product” category (source: interviewee, Liivimaa Lihaveis).

With regard to **policy drivers**, Liivimaa Lihaveis is using actively policy support measures available and is searching constantly for additional funding to be used for promotional activities. Overall agricultural production is obviously influenced by Pillar 1 and measures of the Estonian Rural Development Plan (ERDP) 2014–2020, e.g. “**Organic farming**” (M11), “**Co-operation**” (M16; **support for short-supply chains**), “**Development of agricultural enterprises and entrepreneurship**” (M06), **LEADER** (M19) and “**Establishment of producer` groups and -organisations**” (M09). Management of semi-natural habitats is supported by the RDP measure “**Support for the maintenance of semi-natural habitats**” (M10.1.7).

Marketing and promotion activities of the approach are supported by several other measures, including “**Market development support**” (national), “**EU information provision and promotion measures**” and ERDP measure “**Quality schemes**” (M03) – only two national food quality schemes have been developed, in addition to “Grass-fed Beef” also “Onion Lake Peipus”. Support for development of export and finding export markets is considered to be very valuable (source: interviewee, Liivimaa Lihaveis).

Importance of support measures has increased since the establishment of the Liivimaa Lihaveis, for example in 2015 support made already about 24% (~158 000 euros) of the total revenue (~670 000 euros) of the Liivimaa Lihaveis (source: Liivimaa Lihaveis).

According to the representative of Liivimaa Lihaveis:

“Different support measures have been very important in order to develop the NGO and possibilities for applying support have been used as much as possible – this includes measures to support production (e.g. organic farming, semi-natural habitats management) as well as promotion and marketing (quality schemes, market development). In 2015 Liivimaa Lihaveis received about 75 000 euros support for marketing and promotion of beef and we have also applied for EU Information and promotion measure, e.g. in 2015 we started 3-year and 600 000-euro project for promotion and marketing activities in neighbouring countries` (Latvia, Sweden)”.

More detailed information on policy measures is given in PEGASUS deliverable WP3.1.

2.3 Discussion of the SES

CS concentrates on production and marketing of grass-fed beef and brings together 41 beef producers from all over the Estonia. Thus CS is **not** concentrating on certain **geographical area** in Estonia.

Figure 2 describes basic elements and connections between different elements of SES in this particular case.

This SES consists of 41 individual farmers and agricultural companies all over Estonia who have joined the “Grass-fed beef quality scheme” managing organically about 14 000 hectares of farmland (incl. more than 12 000 ha of mostly permanent grasslands from which about 2000



hectares are semi-natural habitats), and over 5000 beef cattle (*resource system*). Beef produced on grasslands, esp. semi-natural grasslands supports high levels of biodiversity (species and habitats, pollination, biological pest and disease control), enhances landscape character and cultural heritage, helps to preserve rural vitality and to achieve climate change mitigation objectives (*resource units*).

Private initiative – creation of organisation for whole-chain production-processing-marketing of grass-fed beef (*action situation*). They organise slaughtering and processing (slaughterhouse service and processing is bought in from 2 slaughterhouses and 2 processors) and marketing of over 40 grass-fed beef producers who have joined the official grass-fed beef quality scheme. High quality grass-fed beef is provided to consumers through more than 50 selling points, including shops and other retailers and more than 100 restaurants and other caterers. About 20 chefs in Estonia, Latvia and Sweden who are partners in product development and promotion could be also considered as *actors*.

NGO Liivimaa Lihaveis as beef cattle provider and Nordic Beef as distributor of products are led by the board (the same 2 members) implementing strategic decisions taken by the general meeting of the NGO, organised usually twice a year. They are also responsible for everyday management of the organisation, including communication and making agreements with butcheries, retailers, caterers and other customers and organising promotional activities. The whole system is organically certified and inspected by Agricultural Board (production) and Veterinary and Food Board (processing, marketing). Activities of Liivimaa Lihaveis and their members are supported by several EU and national policy measures (e.g. semi-natural habitats management support, organic farming support, quality schemes, marketing) (*governance system*).

Macro-issues impacting the CS include EU/state support system, incomes of farming, purchase power of consumers, market situation and environmental conditions.

2.4 Common aims, conflicting interests and goals

CS is an example of successful and innovative collective action comprising aspects such as farmer's co-operation, quality schemes, short food chain and local partnerships.

NGO has been ringleader of development of officially registered national quality scheme "Grass-fed Beef" from which also beef producers who are not members of NGO Liivimaa Lihaveis can benefit.

Liivimaa Lihaveis is providing training and information for its members and also to other beef producers possibly interested in joining the grass-fed quality scheme. For example, study trips to USA, Argentina and Uruguay were organised for learning and "*widen the horizons*". Common interest of the Liivimaa Lihaveis is to develop the domestic market, especially the HoReCa sector, but also expansion to Latvia and Sweden and possible start of the development of the market in Lithuania and Finland.

This case is also demonstrating that preservation of grasslands and especially valuable semi-natural habitats which are highly supported by the public policy measures (cross-compliance and greening, targeted measures for semi-natural habitats management) is much more efficient when one can sell (with good price) the products related to the management of this land.



Support does not work by itself, adding value to the production is equally important and they should be developed interwoven.

NGO Liivimaa Lihaveis was one of the organisations who established innovation cluster in 2015 on beef production to be able to apply RDP support for innovation activities under co-operation measure (M16) with an aim to develop grass-fed beef production in Estonia and also organise and implement studies about healthiness of grass-fed beef. Unfortunately, application to Paying Agency (PA) was rejected. As members of the NGO Liivimaa Lihaveis feel that rejection was unreasonable (because of the different interpretation of the legislation) and the evaluators of the applications were incompetent, they initiated lawsuit against Paying Agency. Case is not closed yet (source: interviewee, Liivimaa Lihaveis).

2.5 Other issues arising from SES analysis and context/case study specific aspects/issues

SES is influenced by several general context-specific factors, based on interviews:

- Legislation which does not favour innovation and untraditional thinking,
- Selling living animals to Central-European countries and Turkey which has increased prices in Estonian market and interest in raising beef cattle (although currently hindered due to political disorder in Turkey),
- Lack of strategic long-term thinking in agricultural sector and missing of more foresight strategies, slow preparation of legislation and constant changes of legislation.

3 Status of the SES and potentials

3.1 Description of the SES

It is a private initiative with the aim to give more added-value to the grass-fed beef. Central to the whole system is NGO created by some active persons who are initiators and ringleaders of the whole approach, initiative and action of certain persons is very important for this case.

As mentioned above, the main motivation for this approach was the feeling of the grass-fed beef farmers that they do not get the price for their products what they are actually worth as processing industry and retailers are dictating the conditions and prices. With the creation of the NGO (and private limited company connected to it for distribution), they are able to control the whole chain and get higher price for their products. They have direct agreements with slaughter houses and processors and they are selling directly to shops, restaurants and other caterers.

Liivimaa Lihaveis is actively co-operating with restaurants providing high quality meat and organising different events in order to promote grass-fed beef consumption and cooking. Restaurant chef interviewed: *“Consumers` ask more and more, where the products used in restaurant come from and number of people who appreciate food produced sustainably and responsibly is increasing constantly. We have many loyal customers asking especially organic beef from grassland.”* (source: interviewee, chef). This is important, as without consumers interest the whole approach could fail. Approach has also changed the thinking of beef producers in Estonia in the way they recognise that *“Grass-fed beef and organic production is our*



opportunity and speciality which in long-term provides the highest possible price” (source: interviewee, farmer). At the same time the knowledge of chefs about the quality of raw material and how it is produced needs further development (source: interviewee, Liivimaa Lihaveis).

3.2 Relationships between farming and forestry, and the quantity and quality of ESBOs

Management of permanent grasslands, especially semi-natural habitats is very important for *maintaining biodiversity* (species and habitats) and for protection of *landscape character* and *cultural heritage*. Beef cattle production and accompanying activities, marketing, cooperation with local caterers provides employment in rural areas thus helps to preserve *rural vitality*. Preservation of grasslands is highly important also in terms of *carbon storage*.

All grasslands are crucial for food, foraging and livestock, being at the same time important biotopes. Grasslands store approximately 34% of the global stock of carbon in terrestrial ecosystems and contribute to the soil protection (avoidance of erosion and desertification). Grasslands also provide tourism and recreation possibilities (European Commission, 2008).

Semi-natural grasslands (e.g. alvar meadows, wooded meadows, wooded pastures, coastal meadows) are the result of a centuries-long moderate human impact – mowing and grazing. Semi-natural habitats are very rich in biodiversity and they are threatened in Europe as well as in Estonia. In addition to biodiversity value, they have great value both in Estonian culture and landscape (Talvi, T. and Talvi, T., 2012). For example, about 700 plant species can be found on the Estonian semi-natural habitats and the biggest diversity of plant species has been found on wooded meadows – as high as 74 different plant species per m² (EMoE, 2014).

The area of semi-natural habitats has decreased dramatically in Estonia during the last century for several reasons: intensification of agriculture (new machinery and techniques, amelioration), collectivisation of agriculture during Soviet period and land reforms. At the beginning of 20th century, it is estimated that there were about 1 800 000 hectares of semi-natural habitats in Estonia. For now, about 130 000 ha have been preserved (State Audit Office, 2015; EMoE, 2013) and during 2007-2014, only less than 30 000 hectares of semi-natural grasslands were actively managed (and supported through Estonian RDP; Statistics Estonia 2015).

Semi-natural habitats can be only preserved if continuously managed and beef cattle is very suitable for management of several of these habitats (e.g. coastal and floodplain meadows, wooded pastures).

Liivimaa Lihaveis/Nordic Beef provides 8 working places; its 11 member farms provide another 40 working places. When we consider 30 farms related through grass-fed beef quality scheme, employment supported through the system is evaluated to be ca 150 (source: interviews, Liivimaa Lihaveis; farmers). Related slaughtering and processing provide also some jobs. If we consider that about 10 000 jobs have been lost from rural areas during last 10 years (Hani, 2015), jobs related to this approach are quite remarkable for rural employment.

3.3 Key motivational, institutional and socio-economic factors

Central for the whole SES has been the notion of the Estonian beef producers that in order to influence the current system of production and processing, common action, co-operation and own initiative was needed.



Action taken was for creating the market for the products produced and gave more decision power in developing the processing, and marketing. Special arrangements and avoiding other dealers enable to get higher price for the products (about 20-25% higher compared to market average price; source: interviewee, Liivimaa Lihaveis) This in turn safeguards continuation of production and is directly related to ESBOs of biodiversity and landscape character and cultural heritage related to grasslands managed by the beef farms and to preserving rural vitality – to name key ESBOs related to this approach. By the end of this year they expect to export ca 50% of the meat and this allows them to buy more animals, increase the production volumes and involve more farms in grass-fed beef quality scheme.

Active NGO like Liivimaa Lihaveis is able to be partner organisation also for the ministries in order to develop policies and support measures related to beef sector in general, but also other aspects like food quality schemes, innovation, co-operation networks and management of grasslands in environmental sense. For example, they have had strong influence upon changing of Estonian Water Act in order to enable pasturing on the shores of inland waters as before it was only allowed on coastal areas. (source: interviewee, Liivimaa Lihaveis). This restriction caused many difficulties and additional costs and efforts to many beef farmers, although it might cause conflict with provision of ESBO “water quality” when the rules are not followed.

3.4 Levels of provision, trends and determinants

No specific data is available in order to assess the level of provision of ESBOs provided *specifically* by this case, therefore assessments are only based on judgements/interviews or general information available at country level.

Status of Estonian environment is monitored through state environmental monitoring programme, which includes among other aspects also monitoring of air, ground- and surface water, biodiversity and landscapes and soils. Valuable information about the environmental and socio-economic status and trends is also collected through on-going evaluation of Estonian RDP measures conducted by Agricultural Research Centre (Axis 2 measures) and University of Life Sciences (Axis 1 measures).

For the judgement of levels of ESBO of biodiversity (species and habitats) provision, national monitoring data of semi-natural habitats and related species could be used. Data show for example, that a decline has been registered in the abundance of some species related to semi-natural habitats (e.g. Natterjack Toad), also abundance of birds on coastal meadows (e.g. Common Dunlin, Ruff and Common Redshank) is moderately declining, abundance of Northern Lapwing and Common Ringed Plover is stable, and the abundance of Black-tailed Godwit and Black Turnstone is strongly decreasing (ARC, 2015). The general state of some types of the habitats (e.g. coastal and floodplain meadows) has improved in recent years thanks to management and restoration works (ARC, 2015). CS actors have significant contribution herein.

Although biodiversity is considered to be one of the priorities when talking about the environment, surveys do not confirm that this is also important for wider public. Eurobarometer survey (European Commission, 2015) shows for example, that only 11% of respondents in Estonia see that the decline and possible extinction of animal and plant species, habitats and ecosystems is a very serious problem in Estonia and around half (49%) think that this is a serious problem to some degree. With regard to agriculture and forestry, intensive farming, intensive



forestry and over-fishing are considered as very much threatening biodiversity by 33% respondents in Estonia.

The Agricultural Research Centre (ARC) has conducted a study (2015) to collect opinions of farmers receiving support from RDP Axis 2 measures, notably agri-environment measures, incl. support for the management of semi-natural habitats. Most of the producers who were responding to the survey (86%) considered livestock grazing important for the management of habitats. At the same time about 50% of farmers thought that the increase of biodiversity was not needed on their own agricultural land as it is high anyway and only about 30% of farmers felt that biodiversity could be higher on their agricultural land while about 20% did not have an opinion on that issue.

For the case study actors, the most important ESBOs provided are environmental benefits related to sustainable production based on grasslands management, healthy food and animal welfare. Also rural vitality is considered to be important as the “higher price and increased marketing possibilities of the produce sustain production for more farms in rural areas” (source: interviewee, Liivimaa Lihaveis).

The main determinants of improvements in ESBO provision and key limiting factors include:

- 1) expanding the number of farms of grass-fed beef quality scheme, which enables to increase the area of managed grasslands (incl. semi-natural grasslands) and thus helping to enhance also related ESBO provision;
- 2) promotion of and development of organic farming as production system very suitable for beef production;
- 3) availability and stability of available support measures, especially related to short supply chain, co-operation, promotion and marketing and innovation;
- 4) maintaining the income of farms part of the system;
- 5) changes in consumer’s behaviour and knowledge.

Consumer’s interest in high quality beef meat is not very high in Estonia for several reasons:

- the retail price of beef is relatively high, especially compared to pork or chicken,
- relatively low purchase power of the consumers,
- low knowledge about the advantages of beef,
- producing beef is relatively new phenomena in Estonia and eating beef meat has not been traditional in Estonia (young dairy animals were traditionally consumed) thus consumers do not have knowledge about the preparation of beef and have preconceptions about beef meat (EMoRA, 2016).

3.5 Relevant governance arrangements and institutional frameworks

Liivimaa Lihaveis/Nordic Beef was created purely as a private initiative uniting farmers who are interested in development of grass-fed beef production and related value-chain and to be able to influence the processes and most importantly – get a price for their products higher than average on the market.



As the whole chain from production to marketing is certified organic, all the activities follow the rules of organic farming regulation and other related laws. Estonia has state system for organic farming control and certification. Responsibility on organic production control lies on Agricultural Board, processing and marketing are inspected by Veterinary and Food Board.

As all farms are part of the approved quality scheme of grass-fed beef, they have to follow the rules set by the scheme.

As for the production side, management of grasslands in protected areas is regulated by environmental law and authorities involved are those under the Ministry of Environment (Environmental Board, Environmental Inspectorate). Several of the semi-natural grasslands used by the farms are rented from the state (responsible authority State Forest Management Centre).

4 Conclusions derived from analysis in Steps 1 and 2

4.1 Key findings on the particular SES and its potentials

This case is exploring innovative private initiative of grass-fed beef production and marketing led by farmers-created NGO/related distribution company. NGO is also actively promoting the consumption of grass-fed beef. The main aim of the approach is to give more added-value to the beef they produce and to control better the whole supply chain by organising production, processing as well as marketing.

Grass-fed organic beef production relies on grasslands, and provides related ESBOs like BD, landscapes, carbon storage, rural vitality and also ESBOs related to organic farming (soil, water quality, animal welfare). Without valorisation of the production (in this case beef) the system is not sustainable in long-term. This approach is a good example of the combination of market-oriented private initiative and public support measures which makes possible for farmers to valorise their ESBO provision in markets through price premium for beef produced under organic and grass-fed beef quality scheme rules. There is high potential to increase the provision of ESBOs when the number of participating farms and the area they manage) increases.

Consumers awareness about and interest in grass-fed beef are closely related – the higher knowledge and interest to buy the products provided, the higher success of the approach, wider interest of farmers to join the scheme and as a result increase in quality and quantity of ESBOs provided. This means that the marketing and promotion should include education and awareness rising. Awareness of the consumers on how the products are produced and what are the related benefits – and thus demand for such products – is increasing, certainly a lot thanks to the work of this case study actors.

4.2 Governance arrangements and institutional frameworks

It is private initiative and decisions are made by the organisation itself, but is also supported by wide list of different Pillar 1 and RDP measures and also national support e.g. “Quality schemes” (M03), “Co-operation” (support for short-supply chains; M16), “Organic farming” (M11), “Support for the maintenance of semi-natural habitats” (M10.1.7), “Development of agricultural enterprises and entrepreneurship” (M06), and “Market development support”



(national). For the period of 2014–2020, several additional possibilities were opened like support for short supply-chains (M16) of Estonian RDP. Actors are also using EU information and promotion measure.

Governance of this case includes boards of the organisations of Liivimaa Lihaveis/Nordic Beef and general meeting of the NGO, thus is simple and does not include wide number of actors, different levels of governance etc. Approach (creation of NGO for production, promotion and marketing and private limited company for distribution) is working very well. The strength and the weakness of the system at the same time is its dependence of ringleaders, e.g. some enthusiasts who started the whole system and take responsibility for development.

4.3 Other enabling or limiting factors

This CS is private initiative led by farmers` created NGO and is highly dependent on enthusiasm of leading persons who initiated the whole approach and are actively developing it. This case is also an example that public policy itself (in this case mainly related to management of grasslands and related values like carbon storage, biodiversity and landscape, but also e.g. rural vitality) does not ensure that the objectives of the policy will be achieved only with public support, but also production related to the subject of public support (in this case grassland) should be valorised – and this is exactly what this CS approach will do. It is also very important for the case to notice that promotion and marketing and awareness rising of consumers should not be underestimated as they are crucially important for the success of the approach.

Provision of ESBOs in this case is influenced by several wider macro-issues like EU/state support policy and future of the CAP, incomes of farming, purchase power of the consumers, general economic situation of the country and market situation, but also environmental conditions.

4.4 Reflections on the case study methodology used and potential improvements

For application of CS methodology (informal) interviews were the main source of the information and this worked well.

Ostrom`s SES approach is difficult to implement in the case descriptions. It divides the system artificially into arbitrary parts (e.g. resource system and resource units should not be divided as they are one complex). The link between ESBOs and their role in the SES framework seems rather too marginal. The ESBOs are central and it was a challenge to detail the outputs/results/impacts of action within the system description.

The whole SES approach is based on the assumption that a certain geographical area is analysed, but the current CS was not directly related to a certain geographical area.

It was difficult to find the right balance in the amount of details to be provided for Steps 1-2 and for the steps 3-4.



5 Research and action mandate for Steps 3 and 4

5.1 Agreed objectives of activities to be undertaken with initiative/stakeholders

Stakeholders involved are willing to provide additional information and data, if needed.

For in-depth analysis in steps 3 and 4 the following aspects could be further investigated:

- 1) economic viability of the CS approach,
- 2) more detailed insight into farming-related questions (impact of CAP in general and available support measures, possible developments in support systems) and relationships with ESBO provision,
- 3) what kind of support is needed to support similar initiatives. How to target the support in a more efficient way and how to combine the support with private marketing initiatives in the best way,
- 4) more detailed study of consumer awareness, perception and appreciation of PGs in relation to the case study approach (grass-fed beef production).

5.2 Innovations, impact, transferability, potential risks and research bias

CS stakeholders were open to continue CS and are willing to provide more input into research.

This CS seems most promising for continuation in steps 3 and 4, as it includes innovative approach in Estonian context and also common action in order to provide ESBOs. It is also good combination of public support measures and private initiative and could be seen as an approach which can survive. CS provides wide list of ESBOs and for several ESBOs (biodiversity, landscape character and cultural heritage, carbon storage) provision level is already quite high and has good potential to increase. It is transferable to other contexts and countries, but has high potential to expand also in Estonia.

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www.liivimaalihaveis.ee

Estonian Beef Breeders Association: <http://www.lihaveis.ee/en>



7 ANNEX

7.1 Documentation of research and action progress

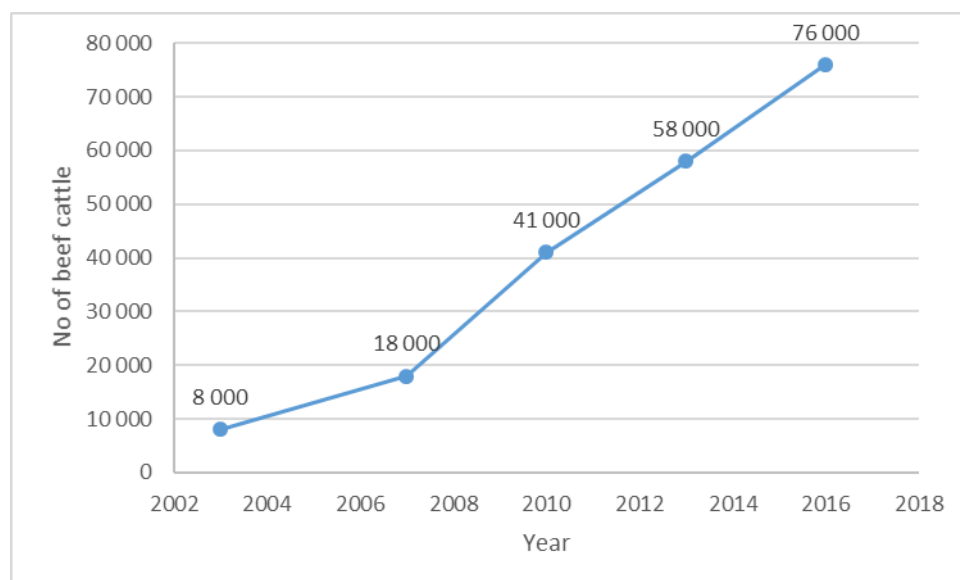
Table: Overview of interviewees

	Organisation	Area of expertise
1.	NGO Liivimaa Lihaveis, Nordic Beef Ltd	Member of the Board
2.	NGO Liivimaa Lihaveis, Nordic Beef Ltd	Member of the Board
3.	Farmer, member of NGO Liivimaa Lihaveis, member of grass-fed beef food quality scheme	
4.	Farmer, member of grass-fed beef food quality scheme	
5.	Restaurant in Tallinn	Chef

7.2 Supporting data and statistics

Development of beef cattle breeding in Estonia

Figure: Number of beef cattle in Estonia 2003–2016. Sources: pikk.ee, lihavies.ee, EMoRA, 2016; own compilation.



Websites

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- Statistical Office of Estonia (livestock production): http://pub.stat.ee/px-web.2001/I_Databas/Economy/01Agriculture/02Agricultural_production/04Livestock_production/04Livestock_production.asp.

