Can systems using hyper specialized breeds be considered as localized agrifood systems? The example of the Belgian Texel breed

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Abstract: The Belgian Texel sheep breed is a meat purpose breed, the Belgian form of the Dutch Texel breed, with muscular hypertrophy. Comparing the situation of this breed to others hyper specialized breeds in Belgium raise the question of the existence of a Belgian breeding model.

We interviewed 11 stakeholders concerned by the Texel breed (breeders, scientists, veterinary, extension service technician, and butcher).

Those interviews have allowed us to discuss three dimensions of the Texel breed management:

- The breed is actually a breeding animals propose breed.

Sheep meat is few consumed in Belgium and butchers seem to prefer crossbreed meat than pure Texel meat. As a consequence the main aim for breeding Texel is breeding animals selling. The breeders consider the selection activity as their activity, and underline that it is more interesting for them from an economical point of view to sell breeding animals abroad (United Kingdom).

- The breed management follows a Belgian model and is as a consequence localized!

The Blanc Bleu Belge cattle breed is clearly a model for the Texel breeders and several of them mention the "Belgian eye of the breeder". Producing meat in quantity is the core motivation in this breeding model (a breeding model that echoes an engineering culture where performance is a core motivation). Among the organization of breeding in Belgium, the breeding shows contests are important places where this model is shared by breeders, even among deferent species.

- The breed is very well adapted to its breeding situation but what about it adaptive capacities?

The breed is mentioned as adapted to grazing (good quality grassland) and it is as well adapted to socio-territorial conditions of belgium (small area). The breed is easy to breed (except during the lambing period very time consuming which means that flocks are often small flocks). It's considered as well adapted to breeding animal production for crossbreeding. However, most of the interviewed persons have mentioned failures in adaptation to changes in breeding conditions (bigger flocks, breeding in hot climate area for instance).

Thanks to this case study, we discuss the fact that qualifying an agrifood system as "localized" is not enough and that it is crucial to understand and analyze the anchorages in local as dynamics and in their dynamics.

Keywords: hyperspecialised breed, animal genetic resource, lock-in

Introduction

In Belgium hyper specialized breeds have been selected for meat purpose, each one with a muscular hypertrophy, in several livestock species. The best known is probably the cattle breed Blanc Bleu Belge, but a hyperspecialized pig breed have also been selected, the Pietrain, and a hyperspecialized sheep breed as well, the Belgian Texel sheep breed.

The Belgian Texel sheep breed is a meat purpose breed, with muscular hypertrophy, and it is the Belgian form of the Dutch Texel breed. Indeed, even if very few references are available concerning the history of the Belgian branch of the breed, it is clear that it comes from the Dutch Texel, itself having its origins the Texel islands area, and which also initiated the French branch of the breed.

The breed is managed by an association for small ruminant breeding in Wallonie[222], called AWEOC (Association Wallonne des Eleveurs Ovins et Caprins). This association is organized in breed commissions for each breed. The Belgian Texel has its own breed commission, different from the one for French Texel. The breed commission is in charge of managing the Flock Book, the "linear quotation"[223], and to organize breed livestock shows (competitions organized at the province[224] level).

Comparing the situation of this breed to others hyper specialized breeds in Belgium raise the question of the existence of a Belgian breeding model with an anchorage in the Belgium territory (Daniaux et al., 2006). Considering territorial anchorage of those hyper specialized breeds echoes the statement of Hinrichs (2003) that there is a frequently used shortcut that consider food system localization as an automatic counterpoint to globalization (and the associated industrialization and homogenization of agriculture). The hyper specialized breeds can be referred to in terms of territorial anchorage (Daniaux et al., 2006) and are at the same time considered as the product of an industrialized and globalized form of agriculture (Stassart and Jamar, 2009). This case questions mainly the local-global dichotomy, through the apparent contradiction mentioned above and invites to question the term "local".

Comparing the situation of the Belgian Texel breed to others hyper specialized breeds in Belgium, our aim is in this paper

(i) to identify elements referring to a Belgian breeding model in various stakeholders interviews,

(ii) to make hypothesis on the way this model was build,

and (iii) to discuss the anchorage of this model in the Belgium territory on the specific case of the Texel breed.

Thanks to this case study that we put perspective with other cases of localized food systems in Belgium, we discuss the question the term of "local" itself in the dynamics of local anchorage.

A case study based on interviews

We interviewed 11 stakeholders concerned by the Texel breed (breeders, scientists, veterinary, extension service technician, and butcher). The interviews were semi structured interviews concerning, depending on the stakeholders, the main characteristics of the farming systems, the points of view on the breed, the motives for breeding it, the selection criteria, the collective management, the valorization

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[222] French speaking Belgium.
[223] A qualification grid attributing numerous marks to an animal depending on its morphological characteristics, which is similar in most of the points that are marked for any sheep breed in Belgium.
[224] Territorial organization in Belgium.

We made a thematic analysis of the interviews, distinguishing the several themes mentioned in the box 1.

Box 1: Themes identified in the thematic analysis of the interviews notes

-Comparison with other breeds
- Comparing Belgian Texel with Dutch and French Texel
- Comparing with the rare sheep breed Roux Ardennais

-The selection model
- The Texel Model
- The Belgian selection model (comparing with Blanc Bleu Belge and Pietrain)
- Fact that the selection have moved too far and move backward

-Abilities and characteristics of the animals of the breed
-Breeding activities at individual and collective level
- Genetic management
- Organization
- Collective tools
- Breeder figure
- Request for care (during lambing)

-Market for products of the activity
- Economic sector for Texel
- Market for breeding animals.

As our aim was to compare this case to the other Belgian hyper specialized breeds, we mobilized the data from case studies concerning the *Blanc Bleu Belge* and the *Pietrain* breeds made in the SEED Arlon and mainly leaded by Catherine Mougenot and Pierre Stassart (Stassart & Jamar, 2008 and 2009; Stas, 2007, Stas & Mougenot, 2009).

The Texel breed management: a specialized and localized breed
Those interviews have allowed us to discuss three dimensions of the Texel breed management:

The breed is actually a breeding animals propose breed.
Among the interviews two outlets have been identified for the animals of the Belgian Texel breed:

-They can be sold for meat consumption. Sheep meat is few consumed in Belgium compared to other species and in particular beef. Direct selling represents as a consequence an alternative outlet for the breeders. Butchers seem to prefer crossbreed meat than pure Texel meat. Meat quality is different from the meat quality of the *Blanc Bleu Belge* (genetic phenomenon explaining the hypertrophy are not the same). As a consequence, if the breed is a meat purpose breed its main use for meat production is as a breed for crossbreeding.

-The main aim for breeding Texel is selling of breeding animals. The breeders consider the selection activity as their activity, and underline that most of the breeding animals are sold abroad and not in Belgium. Indeed breeding animals can be sold at a much higher price abroad (in United Kingdom Kingdom among other places) than in Belgium. Price of a ram can reach 500 000 Francs (1 EUR = 40,3399 BEF) following a breeder. One of the breeders have compared in his interview the selling price of a breeding animal in Belgium (between 200 and 250€) to the selling price of a small lamb in England of in Irland (500 or 1000 €).

As a consequence, even if the Belgian Texel breed is presented as a meat purpose breed it is actually a breeding animals propose breed.

The breed management follows a Belgian model and is as a consequence localized!
The *Blanc Bleu Belge* (BBB in the following of the paper) cattle breed is clearly a model for the Texel breeders. One of the stakeholders interviewed mention their common relevance for cross-breeding.

Producing meat in quantity is the core motivation in this common breeding model. As a consequence, in Texel, the criteria "meat" and the "dressing percentage"[225] are important, which is similar in BBB. Motivation for breeding animals is linked to meat production: « *c'est le plaisir d'élever des bêtes à viande* » (« it is the pleasure to raise animals for meat purpose. ». However as mentioned earlier the meat quality is not the same in Texel and in BBB.

Comparing Texel to BBB, and sometimes to Pietrain, several of the stakeholders interviewed mention the "Belgian eye of the breeder". A Belgium model is visible in this comparison « *le Belge est améliorateur au niveau de la viande* » (« The belgian breeder improves the meat »). The Texel breeder's figure is link to the figure of the Belgian breeder « *on rejoindra peut être à un moment donné l'œil du belge par rapport à la sélection, le belge est un bon sélectionneur au niveau allez, on voit ça en Piétrain, on voit ça en Blanc Bleu.* » (« We may at a moment meet the question of the eye of the belgian breeder for selection, the Begian breeder is a good breeder, you can see it with Pietrain, you can see it with Blanc Bleu »). This characteristic is linked to the « eye » of the breeder mentioned by several breeders, it allows for instance to assess the dressing percentage, or to spot an animal good for meat (carcass, shape of the back, shape of the leg) and it is often mentioned when a comparison is made with BBB.

As a consequence, for the interviewed stakeholders, this selection model is localized, the entities of localization being Belgium (sometimes compared to other territories like France for instance).

In their detailed analysis of the BBB model, to understand its irreversibility and where is situated the lock-in, Stassart and Jamar (2009) show that this anchorage go throw several dimensions (consumers used to the "lean and tender" referential, butchers that have developed a specific cutting technique adapted to BBB, veterinaries that practice the cesarean section etc.). The complementary study of the Texel case reveals that among the organization of breeding in Belgium, the breeding shows contests are important places where this model is shared by breeders, even among deferent species. The role of the show contests is fundamental for breeders; it is a way for them to become known (and afterwards to sell breeding animals). It very probably contributes to the building of common references between species. One of the breeders interviewed explain that he decided to raise Texel after having spent time in those shows for BBB, when he was young, with his family. Animals in the shows are judged by confirmed judges that are trained by former judges, which also probably contribute to maintain a model. Indeed to become judge, it is necessary to have participated to the contest during three years and then to be trained, judging with a confirmed judge during three years, before being confirmed as judge.

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[225] The ratio of carcass weight to live weight.

The breed is very well adapted to its breeding situation but what about it adaptive capacities?

With this anchorage in a Belgium selection model, the breed is mentioned as well adapted to grazing (good quality grassland that can be quite easily met in Belgium) and easy to breed (except during the lambing period very time consuming which means that flocks are often small flocks). The breed is qualified by the breeders themselves as a grassland breed. The vocabulary used to mention the adaptation of the breed is a vocabulary usually associated to hardy breeds: they say that it is a sheep easy to handle and few demanding in terms of food. Most of the farmers mention that their animals are fed mainly with grass, with supply of hay, haylage or other complement when there is not enough grass or at specific periods (for instance before lambing). This « few demanding » breed dimension is to keep in proportion as it seems difficult to feed the breed on « poor » grassland, and as this characteristic is limited to the non lambing period. The lambing period is a period when the care demand is high, all the lambing must be kept under surveillance, and some of them must be guided. The breeders pretend that they minimize the use of the caesarian section, as, contrary to the situation of the BBB, it is not profitable from an economic point of view. As a consequence, the breeders call the veterinary only if they consider the caesarian as mandatory because there is a risk of losing either the ewe or the lamb.

The Texel breed is considered as well adapted to breeding animal production for crossbreeding.

However, most of the interviewed persons have mentioned failures in adaptation to changes in breeding conditions (bigger flocks, breeding in hot climate area for instance). Several experiences of use of the breed in countries with hotter climate are mentioned by the breeders and have leaded to failures, animals having respiratory problems. Some breeders have also mentioned examples of colleagues that have tried to raise flock with high number of animals (more than 100 ewes) and they had difficulties (due to the care demanding during lambing), one of the breeder considers that to make a good selection activity the flock mustn't be of more than a few dozens of animals.

Moreover, it seems that when the project of the farmer is to valorize other products than breeding animals (meat or wool), the Texel breed is not chosen, or only used in crossbreeding. Pure breed Texel flock only aim at participating to contests shows and at selling animals.

Here the lock-in's characteristics are different from the ones for BBB (Stassart and Jamar, 2009). Main differences in the models are due (i) to the fact that in one case caesarian is the rule whereas in the other case it is used but avoid as long as possible (as the relative cost is higher for sheep than cattle), (ii), to the fact that there is a dissociation between the breeding animal and the meat product in the Texel case contrary to BBB. Several breeders mention a step backward that have been made after facing excesses[226] in the selection of the Texel, we can see here that the breed is very well adapted to the situation in which it is raised but that it miss capacities of adaptation to territories with other natural and climate conditions, to other systems, or to other aims for production.

Local anchorage in of localized agrifood systems

Thanks to this case study, we discuss the fact that qualifying an agrifood system as "localized" is not enough and that it is crucial to understand and analyze the anchorages in local as dynamics and in their dynamics and to question what is the "local" in such an anchorage dynamics.

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[226] Decrease of the size, modification of the morphology, probable increase of inbreeding

The different dimensions of local anchorage
The different dimensions of local anchorage we can discuss through this case study are the following:

-The anchorage by biological resources and bio-climate characteristics.

The Texel is itself a genetic resource of the Belgian territory, as it has been selected in this very territory, and seems to have few links with vegetal resources, except the fact that it is demanding in terms of grassland nutrient qualities. The breed also demands climate conditions that correspond to the Belgium territory (can't be raise in conditions with too high temperatures).

-The anchorage by territorial organization and collective tools:

The shows contests play a role for the transmission of the Belgian model of animal selection. Other collective tolls play a role in the building of this model, like analysed by the previous studies of Pierre Stassart on the BBB case (qualification grid for the meat, model for meat cut etc.)

- The anchorage by territorial organization and know-how:

The veterinary activity and the know-how of the veterinary, but also of the breeder itself (for preparing the caesarian section) are also a part of this model (one of the interviewed stakeholders compared with the close French situation where the breeders are not used to prepare the scene for the caesarian activity). The Belgian butcher develops also a specific cut technique that is part of the anchorage of this system.

- The anchorage by the market and the consumption habits:

This dimension of the anchorage is not important for the Texel breed as the main market for the main product (breeding animals) is abroad. On the contrary, in the anchorage of the BBB system (Stassart and Jamar, 2009) the Belgian consumers habits (with the lean and tender referential) is of the first importance.

-The anchorage by the farming system linked to small land holders:

We have seen that especially for the model to be maintained, the farming system involves small flocks and a majority of the breeders are hobby breeders (land resource is a rare resource in a country as Belgium with high population density). This characteristic is a key characteristic of the model, however it is not specifically corresponding to localized characteristics.

The anchorage of the breed covers several dimensions, but this system is threatened by the fact that it lacks adaptive capacities, and it strongly raises the question of the renewal of the resources involved in the system, and in particular the genetic resource itself, as the selection process as made mandatory to put under surveillance the lambing, as the selection process as leaded to animals considered as fragile (respiratory problems in hot climate conditions for instance), and as some breeders mention the fact that they favor inbreeding to fix characteristics they are interested in. This question of the renewal of the resources in the system moves it away from classical systems studied in the LAS (Localized Agrifood Systems) studies area (Fournier and Muchnik, 2010).

The multiple meanings of "local".
As we have seen, local anchorage concerns numerous dimensions, but most of all this case study; when comparing it with other kind of LAS, invites to precise what is "local".

Indeed, the comparison of the Belgian Texel with the case of the « *bœuf des prairies Gaumaise* » (see box 2, Stassart and Stilmant, 2012) confirms the fact that the term "local" refers to very di-

verse realities. In the Texel case, the « local » the stakeholders refers to is Belgium, they consider that there is a specificities of the Belgian breeder, that they for instance compare to the French breeder, and they consider that they can benefit this image (the reputation of the animals coming from Belgian selection on other territories is for instance illustrated by the fact that they use the term BelTex in United Kingdom to differentiate Texel from Belgian selection). In the *"bœuf des prairies Gaumaise"* project, the local is the *Gaume* territory, which is a territory that still have to be build but that is of the first importance for the stakeholders of the projects.

What differentiate those two "local"? Is it a question of scale that defines the LAS? This comparison indeed echoes the invitation that made Stassart and Stilmant (2012) to consider the local (and the territory) as notions that are built and situated. As a consequence, what is the local that makes sense for stakeholders has to be questioned in each situation, as well as the role given to this "local" in the development project designed by the stakeholders.

Box 2: The «bœuf des prairies Gaumaise» case (from Stassart and Stilmant, 2012)

> This project has start in 2003 in the *Gaume* region in Belgium, in a frame of intervention-research leaded by a sociologist and an agronomist, with an aim to develop an alternative short chain satisfying citizen new expectations, overcoming the lock-in associated with the BBB model.
> It took place in the *Gaume* territory, in the south of Belgium, which seemed a good frame to bring about a convergence of interests and to associate heterogeneous stakeholders. This territory benefits a specific image for its life style, even if Stassart and Stilmant underline that it was more at the beginning of the project a "dreamt territory" than a "territory in project".
> The aim was to sell a beef valorizing the local grassland, combining an aim to develop an alternative and quality food production and to manage an ecosystem. With an aim to overcome the lock-in linked to the BBB model in its multiple dimensions, the project associates a diversity of stakeholders from farmers to environmental managers or consumers.
> First ox were sold in 2007 and specification produced in 2008.

Conclusion

The case study of the Belgian Texel breed, with its paradox invites to question the term "local". Characterizing the dimensions of the local anchorage dynamics and a questioning the reversibility and the adaptability of the system we compared it to very contrasted forms of localized agro food system that echoes more to the LAS (Localized Agrifood Systems) research group research objects (Muchnik et al., 2008). This case study confirms that qualifying an agrifood system of localized is not enough as long as the "local" term covers contrasted realities.

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