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Soil, Water, Labour
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Animal Farming

After the Age of the Carnivore: How Will Your Diet Transform the Landscape?

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The topic of animal farming provokes many heated debates around ecology and ethics. For this report, we investigated current practices of conventional meat production in Switzerland and explored its alternatives. Through the lens of a reduced meat consumption, we sketched how the landscape might transform under these alternative practices. But are the Swiss ready to question the status of its almost national symbol, the cow?

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The Commodified Animal



We mostly consume the meat of animals as a ready-to-cook product from the supermarket, but what about the invisible process behind it?

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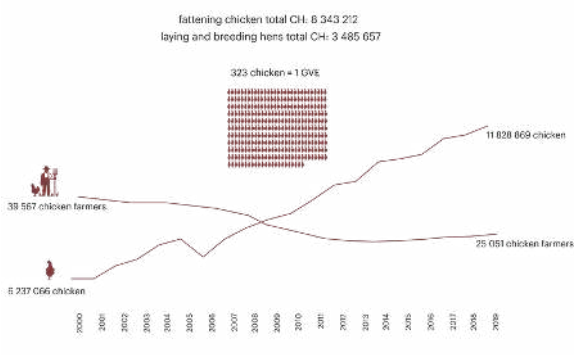
An animal's body consists of different parts and disassembling them into a handy product requires the knowledge of professional butchers. Their work includes separating the "useful" parts from the "waste". In Switzerland, only 52 percent of the live weight of a cattle is processed into food for humans. The remaining parts are turned into petfood, biogas, fertiliser, or are simply burned.

Cattle account for 71.1 percent of all slaughter weight that is processed in Switzerland. The Grossvieheinheit (GVE) is a conversion key for comparing different animals based on their live weight and measures the animal by its productivity. Based on the mass of one cattle, that equals 1.0 GVE, a chicken, for example, counts as only 0.0031 GVE. In Switzerland, large firms such as Micarna (Migros) or Bell are responsible for the processing of the animal. These large wholesale distributors process ever larger quantities of meat, made possible by the rationalisation of operations. In July 2020, farm and pasture slaughter has been legally introduced in Switzerland as an alternative to the killing of the animal in industrialized facilities. Decentralized killing of animals aims to eliminate the need for live transport so that stress to the animal can be minimised.

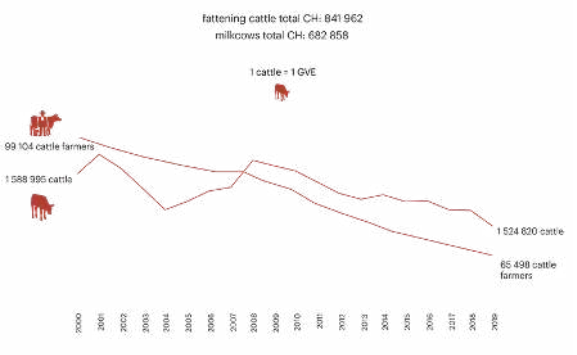
Switzerland has a self-sufficiency rate of 81 percent in meat production. The remaining 19 percent is imported, in particular to meet the demand for premium cuts and mass-processed meat. The import is financially attractive as the production costs are generally cheaper outside Switzerland and the transportation costs are relatively low. Given this condition, even seemingly costly operations such as the active and passive Veredelungsverkehr (outward processing traffic) between Switzerland and its neighbouring countries are economically viable. Nevertheless, import remains strictly limited as the Swiss State aims at protecting its economy.



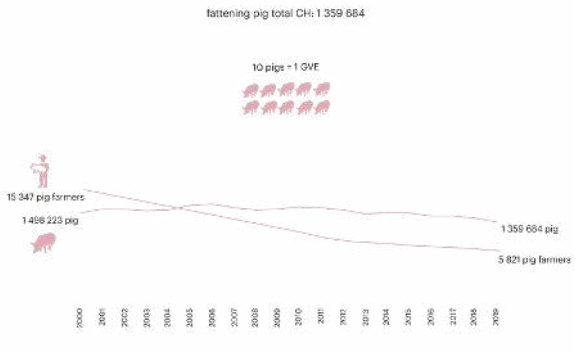
About Animal Farming, SRF, 2018.
https://www.youtube.com/watch?v=LeJmdhk3DPE



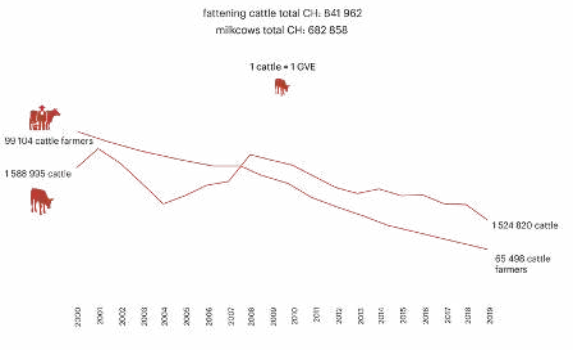
Intensification in animal farming: the number of farms decreases while livestock numbers increase. This indicates that farms have become larger and new breeds have become more productive.



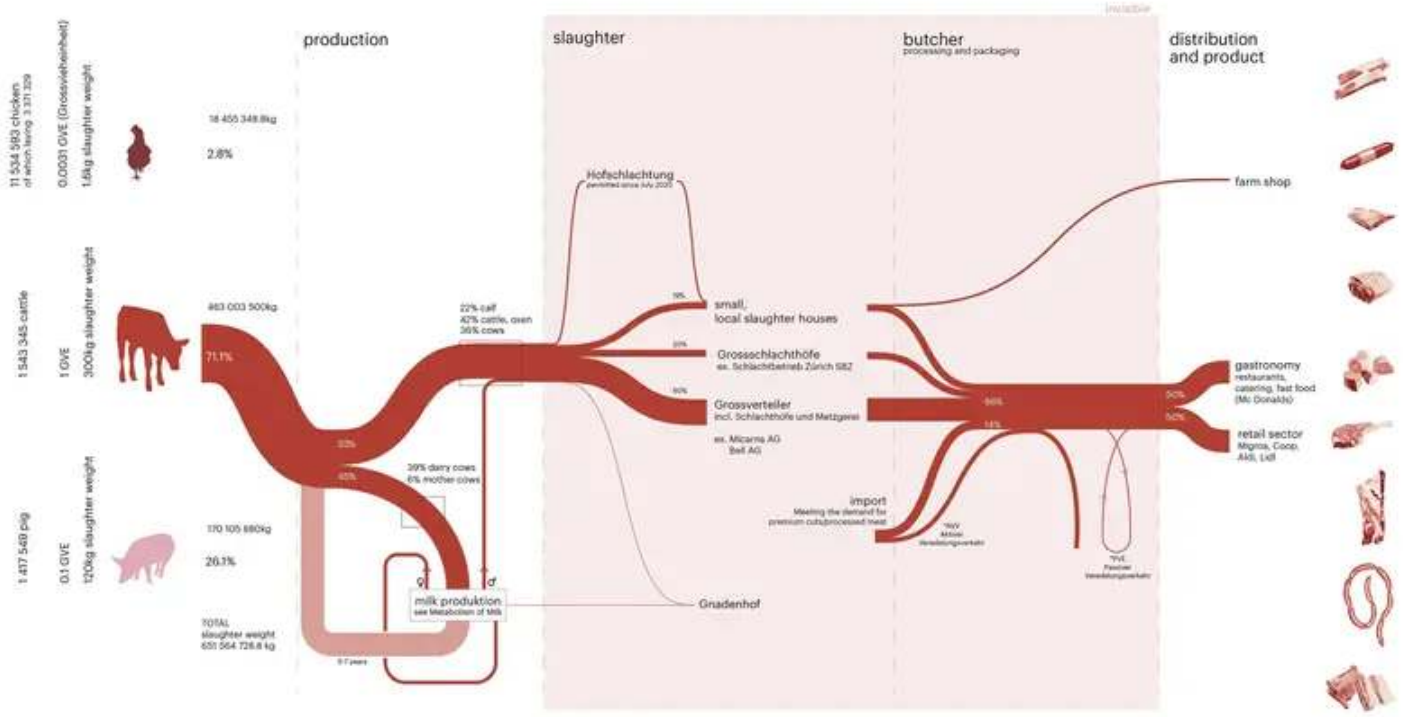
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Metabolism of beef: most of the cattle is processed into industrial meat products. Not to be neglected is the large proportion of animal' parts that are utilised as animal feed for pigs. Source: AGRIDEA, 2017

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How Industrialisation of Livestock Production Transformed Meat into a Mass Product

The mass production of meat began with increasing prosperity of the Swiss people, in particular after the Second World War. As a status symbol for wealth, it became a desirable food on the plate. The prerequisite for mass production was the introduction of industrialisation to animal farming and slaughtering. One of the main concepts of industrialisation, the one of the assembly line work, has not been invented by Henry Ford, as often quoted, but its roots actually lie in the slaughterhouses of Chicago's Union Stock Yards, starting in 1865. By the start of the 20th century, the stockyards employed 25,000 people and produced 82 percent of the domestic meat consumed nationally.

This invention soon spread over the globe and eventually entered Swiss meat production. Since then, an ongoing optimization of processing steps in a complex chain of work can be observed. Though slaughterhouses have become highly industrialised facilities, they still depend on manual labour for certain operations.



Slaughtered bodies carried over stairs to the exterior by the transport rail, slaughterhouse Zurich, 1960. Photograph: Erwin Kuenzi. Source: Baugeschichtliches Archiv der Stadt Zürich

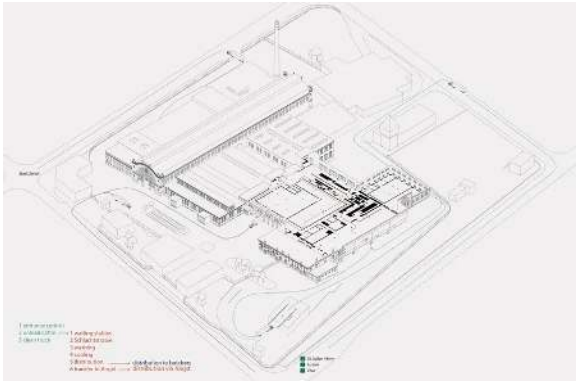


Workers passing the prominent gate of the connection hall, slaughterhouse Zurich, 1980. Source: Baugeschichtliches Archiv der Stadt Zürich



Aerial view of the slaughterhouse Zurich, 1909. Source: Baugeschichtliches Archiv der Stadt Zürich

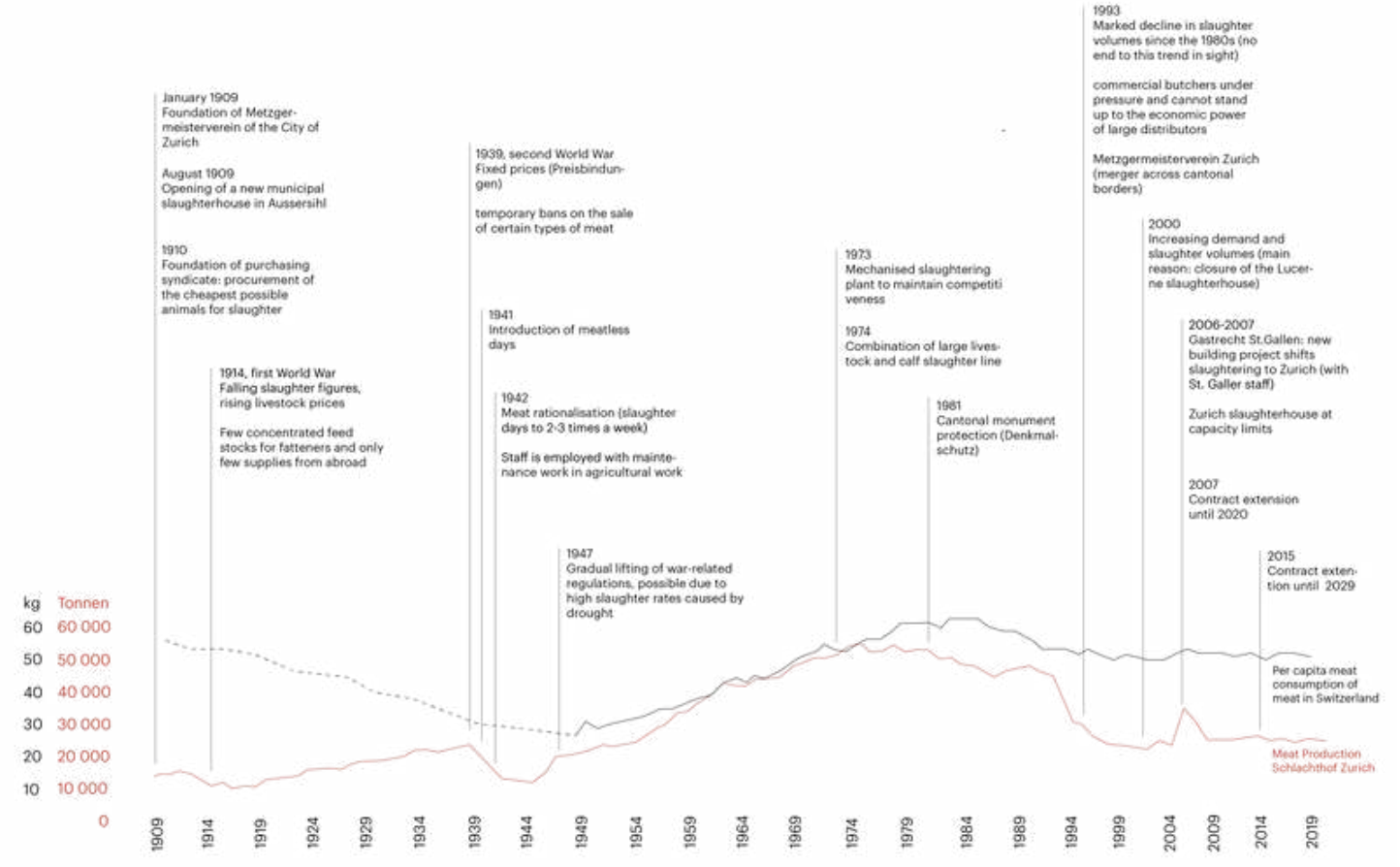
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Slaughterhouse Zurich: arrival, processing, and distribution on site. The animals arrive usually in early morning hours, when most people still sleep, thus mostly invisible to humans.

The slaughterhouse Zurich, one of the last remnants of Swiss pre-war meat production, serves on the one hand as a witness to industrialisation processes. At the same time, its representative architecture reveals the social construction of meat consumption as something aspirational, which was the main driver for the rising meat consumption in the 20th century.

When in 1909 the city-run slaughterhouse Zurich was completed, at the time at the outskirts of the city of Zurich, it was one of the most modern slaughterhouses in Europe. Its representative architecture reveals that the slaughtering stood for something to be proud of. The years and decades that followed conversions became indispensable, and the building was transformed bit by bit into a highly industrialised facility on the inside – while the historical, listed facade stayed in place. The slaughterhouse Zurich is one of the largest slaughterhouses in Switzerland located in a city. Most other big slaughterhouses in Switzerland have settled in peripheral areas of the Swiss Plateau, with better connection to the road network. The use of the building is to be maintained until 2029. In the discussion about the use after 2029, consideration is being given to moving the building out of the city to make room for other uses. The relocation of the slaughterhouse would reinforce the already existing invisibility of how animal is transformed into meat.



The historical development of the slaughterhouse Zurich reveals a decreasing meat production since the 1970s with an overall increase of meat consumption in Switzerland. Source: Simone Desiderato, Martin Illi, Urs Lengwiler, Fleisch für Zürich: 100 Jahre Schlachthof Zürich, Zurich 2009

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Metzger Angst nowadays owing most of the facilities in the SBZ.



The large connection hall between slaughterhouse and butcher is now used mainly as storage space and drive through for delivery purposes.



Cleaned buckets for slaughter waist placed in front of former little butcher shops in the connection hall.



Delivery docks have been added to the monumental building of the Schlachthof—now being used by the Metzgerei Angst.

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The Animal Behind the Meat



Historically, the cow was an integral part of the Swiss farmer family, supporting the farming activities as a beast of burden and provider of natural fertiliser for the crops. With the industrialisation of agriculture in the 19th and 20th century, the cow has mostly lost its status as a a “co-worker. ”Today, the cow has become a national-like symbol that sustains the image of Switzerland as a pastoral landscape.

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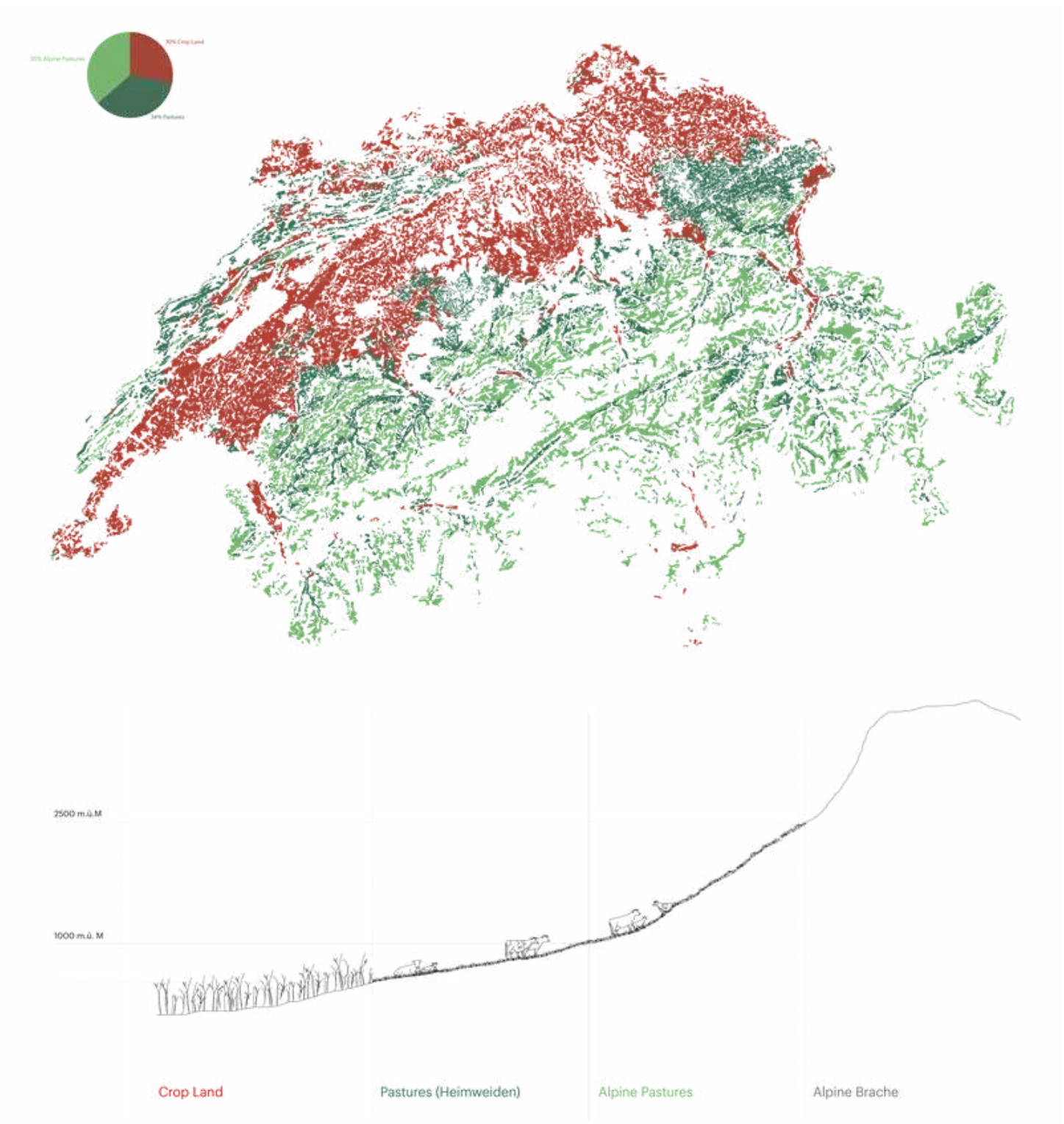
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Historically, the cow was an integral part of the Swiss farmer family, supporting the farming activities as a beast of burden and provider of natural fertiliser for the crops. Every farm owned only few animals, supply lands were often shared collectively. Every farmer was granted his fair share and the community supported its members. With the industrialisation of agriculture in the 19th and 20th century, the cow has mostly lost its status as a a “co-worker” in farming and has merely become a meat product. In particular throughout the last century, the transition from extensive to intensive, mechanised animal farming in Switzerland has altered the status of the animal. In order to make production more efficient, the farmers specialised on one single species and enlarged the number of livestock. The production of fodder was outsourced and no longer part of the farming activities.

The Alps cover 60 percent of the Swiss territory. Its meagre meadows are a suitable environment for domestic cattle and less favourable for crop cultivation. On the Swiss Plateau, today livestock and crop cultivation farmers compete in land consumption, not primarily by the fact that animal is farmed there, but mostly by cultivating crop for fodder such as maize, grain, barley, or soy. Especially pigs and chicken kept for fattening and slaughtering are nearly exclusively fed with fodder cultivated on crops.

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Agricultural Practices Beyond the Postcard Image



The hilly topography of the Tössbergland results in extreme conditions for farming. The specific topography and climate in different altitudes affects the type of farming activities respectively.

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The Zürcher Oberland is a region located in the southeast of the Canton of Zurich. The specific topography and climate in different altitudes affects the type of farming activities respectively. The settlements are concentrated in the lower lying areas. The hillchains altitudes to the east forming the Tössbergland are in a pre-alpine range, which results partially in extreme conditions for farming.

Crop cultivation usually includes the implementation of heavy machinery like tractors. Those are not suitable for the steep slopes of the Tössbergland, where cultivation is limited to pastures and meadows, that sometimes even have to be mowed by hand. According to the soil qualification and potential map, there is potential for crop cultivation on the valley floors of the mountainous areas of Tössbergland, but it is not practiced.

Cattle are the predominant livestock species in the region. Many of them are milk cows and cheese is a typical regional product. One exception is the municipality of Bauma, where a lot of pig farms exist. This can be explained by looking at synergies in pig and cattle farming: farmers feed pigs with by-products from dairy production.

The region has been heavily forested before the Middle Ages when big amounts of the wood stock were chopped for heating. Facing shortages in wood supply, large reforestation projects were introduced. Today, forests are again growing—there is even a law that prohibits to cut forest overgrowing private land. Silvopasture systems, the technical term for animal farmingin foresta, could be implemented as a tool to control the growing of forests. The ETH Zurich has conducted a study to find out about the impacts of cattle in forests. Foresters are concerned about the young vegetation and renewal of the forests, but the study has proven that a sensible combination of cattle and forests is justifiable. Others argument, that cattle farming might even strengthen the bigger trees as cattle eats the younger trees, and the roots of the bigger trees can grow unhindered.

The Zürcher Oberland and especially the Tössbergland is a prominent recreational area for city dwellers. The visibility of farmed animals for visiting touists of the region is a positive aspect as it can increase the consciousness of the city-dweller for animal farming and the production of animal products. But the touristic exploitation of the area has also negative consequences such as littering, which can cause harm to the animals when they eat plastic or metal that was thrown onto their pastures.

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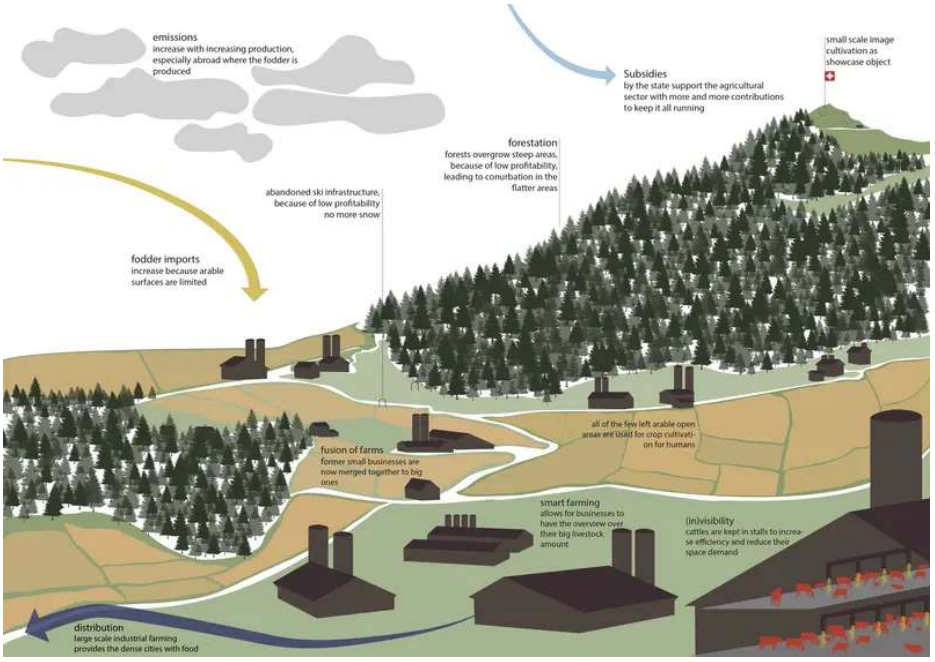
Efficiency Against Ecology and Welfare



The heavily subsidised agricultural sector in Switzerland is in crisis. The state invests large amounts to ensure the production in Switzerland and to keep the image of the bucolic landscape. Now and in the future the incentives created by subsidies will not be sufficient to protect the farmers from the competition on the free market.

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The heavily subsidised agricultural sector in Switzerland is in crisis. The state invests large amounts to ensure the production in Switzerland and to keep the image of the bucolic landscape. Now and in the future the incentives created by subsidies will not be sufficient to protect the farmers from the competition on the free market. Additionallly, subsidies are sometimes highly inefficient as they support practices that contradict each other. The market pushes farmers to more efficiency, especially large scale retailers demand a constant readiness for delivery. Therefore many small businesses have to merge into bigger ones, in order to survive.



Increasing efficiency could mean for the Tössbergland that farmers avoid steep areas, because they are very work-intensive to be cultivated. In that case the steep areas will be taken over by the forests and the agricultural work will concentrate in the flatter areas, arranging the work densely packed together. Different interests in the flatlands will start to compete and conurbation will follow. Since all the arable surfaces are needed for crop cultivation for human food, animal farmers will no longer be able to keep their livestock outside and might choose to accommodate in large industrial facilities. These animals cannot be fed anymore from the meadows, so a lot of fodder will have to be imported. This increases emissions especially in the countries where currently most of the popular fodder, like soy beans, like Brazil or Argentina. Whereas emissions within the country might even sink compared to their productivity, for concentrated animal husbandry it is usually the most resource-efficient way of animal-keeping. But in that case usually animal welfare diminishes heavily. This invisibility of livestock to the average consumer is already fact for lots of chicken and pigs kept in mass livestock farming facilities and the trend could take over also cattle husbandry. Animals in general will be even heavier bred for more efficiency. The consciousness of the consumer for the life of the animal behind their product will certainly decrease even more and consume will be practiced even more carefree. The money a farmer gets for a kilogramme of meat will decrease more and more, because retailers have all the power and strive for profit.

Most likely Switzerland will still not be ready to give up on the image of an Alpine farmer country and it will still be cultivated in a very small scale for touristic reasons, sustained directly by the State or through taxes.

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Designing Animal Welfare

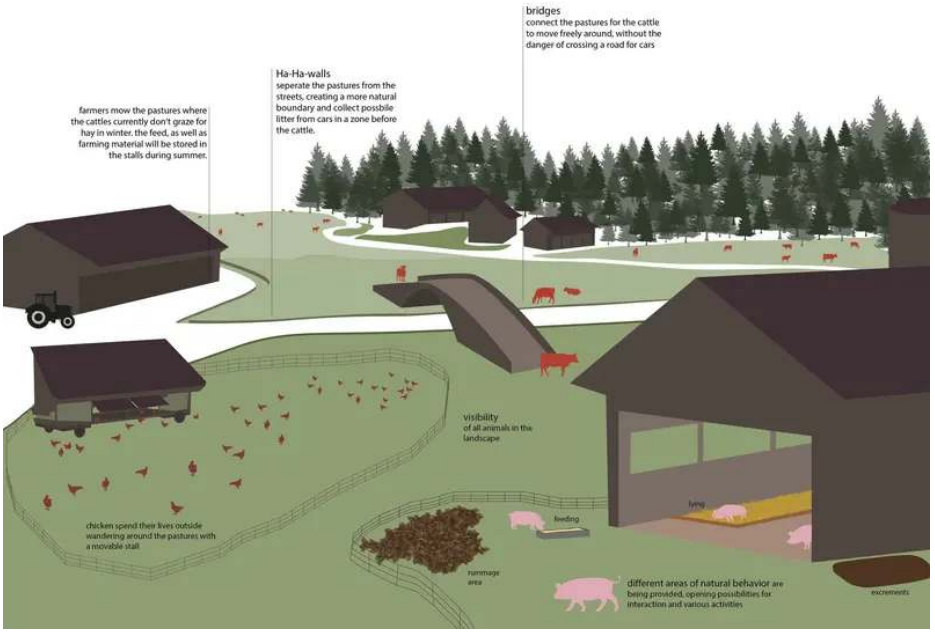


Representative surveys repeatedly show that the vast majority of the population demands meat from “species-appropriate animal husbandry”. This is in stark contrast to the fact that the majority of our consumption of animal products today is covered by industrial animal husbandry. Is a more ethical cohabitation of animals and humans possible?

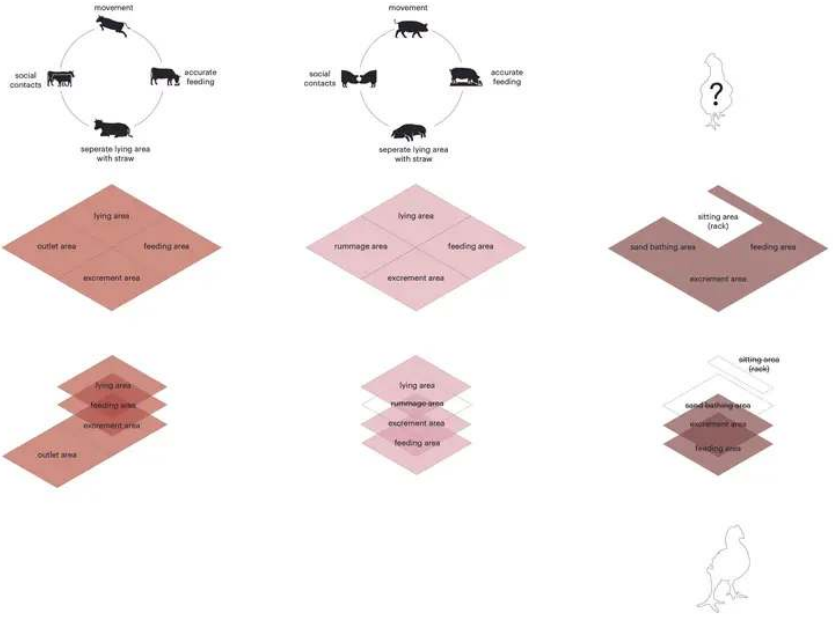
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Representative surveys repeatedly show that the vast majority of the population demands meat from “species-appropriate animal husbandry”. This is in stark contrast to the fact that the majority of our consumption of animal products today is covered by industrial animal husbandry. The reasons for the strong discrepancy between demand and supply are manifold and range from a lack of knowledge and awareness to the multi-billion dollar marketing of the meat lobby, which is still reproducing and cementing the myth of small-scale, vernacular, animal husbandry. The initiative “Keine Massentierhaltung in der Schweiz” from 2018 aims to put an end to industrial farming. The initiators demand lower maximal livestock numbers per farm, more space for the animals in general, no more tether husbandry and conditions that enable the animals to exert more facets of their behaviour. Their motives lie in quests for more animal welfare and ecological topics.

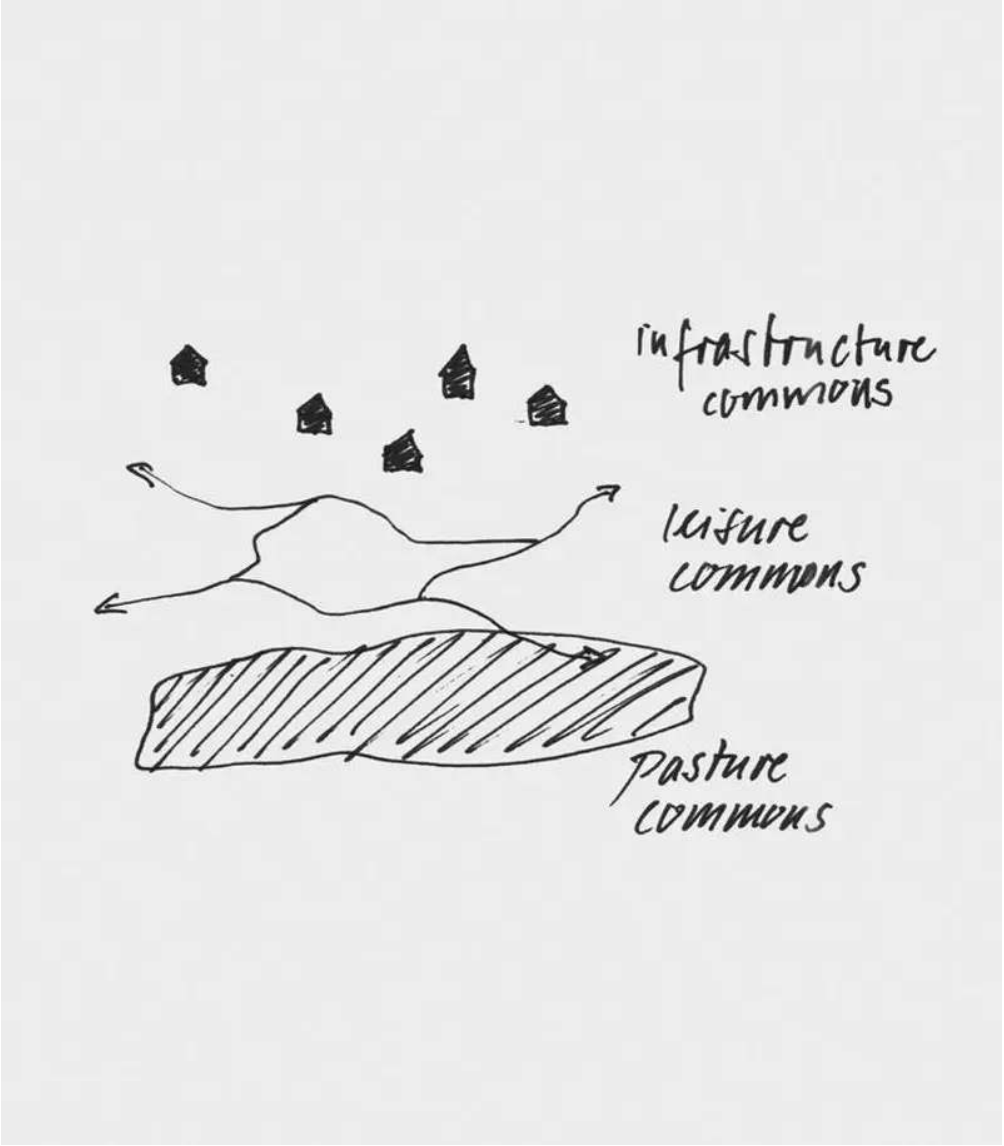


Is a more ethical cohabitation of animals and humans possible? A first step would have to be the abolishment of mass animal husbandry. Any creature needs to have access to fresh air and grown grounds. For chicken this would mean no more halls with possbily some “outdoor climate areas” added, but really a life outside, on the meadow, with space for picking, scraping, and sandbathing. Methods like the “chicken-mobile” exist already and work well, but are mostly implemented only for laying hens, whereas chicken for fattening are barely kept outside. Also pigs for fattening are mostly used to paved or even grilled floors, with no space for rummage and mostly metal fences around them. We demand that also they receive their appropriate areas for natural behaviour like a rummage area where they can test their strong noses by digging into the ground. Especially those two currently marginalised species demand more equality, more space and visibility in our landscape. For cattle the situation is not as bad currently, but an even better future can be imagined. Cattles intrinsic needs for long distance movements and grazing outside could be satisfied by letting them wander around in herds, searching their food for themselves, whereas pastures would no longer be parcelled land plots but vast green areas. Unpleasant encounters with waste from passing cars and long transportations by car for the cattle could be evited by this and fences could be replaced by natural boundaries or “Ha-Ha-walls” like in the historical English landscape gardens.


movement
social contacts
accurate feeding
seperate lying area with straw
lying area
outlet area
feeding area
excrement area
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sitting area (rack)
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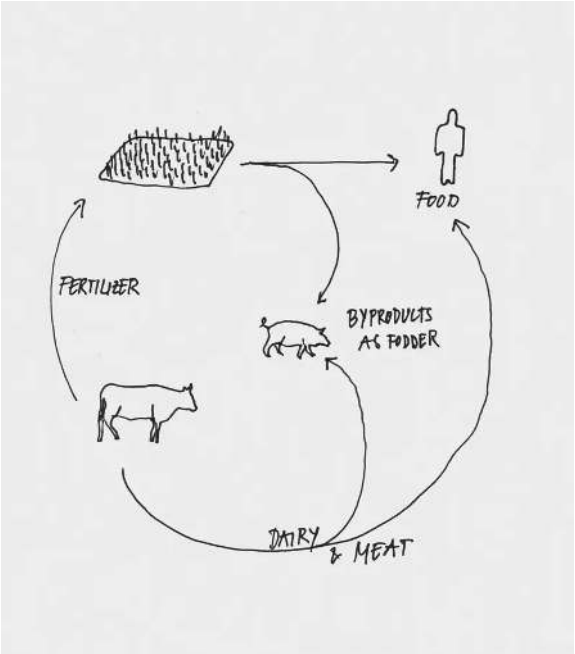
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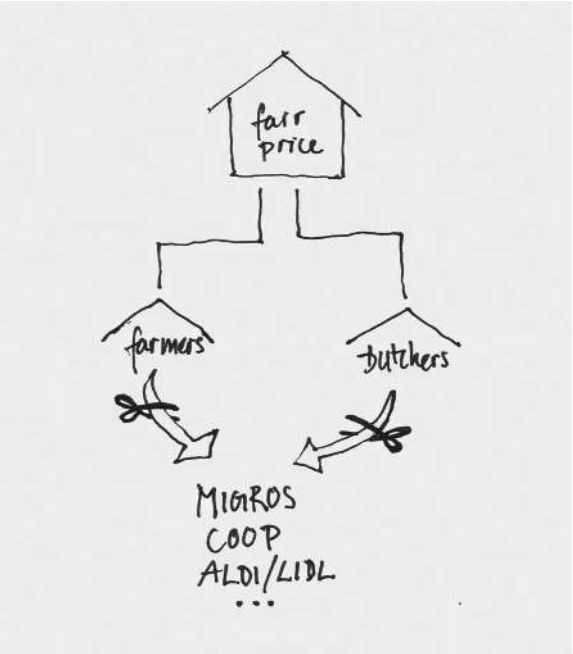
Animal Farming As a Common Good

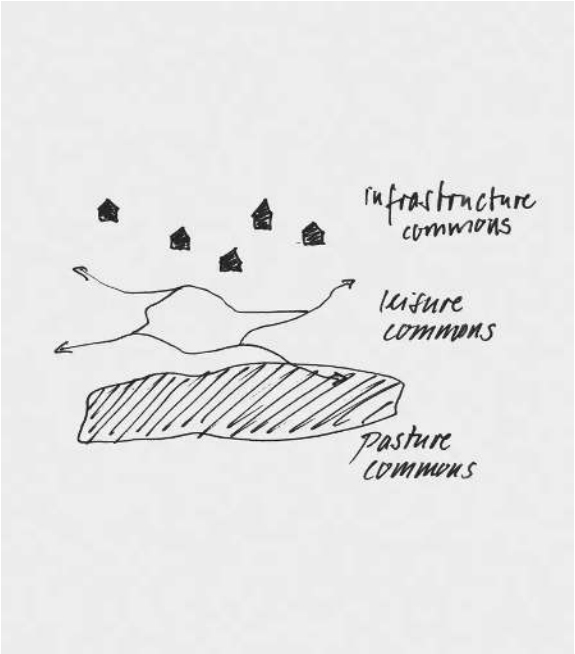


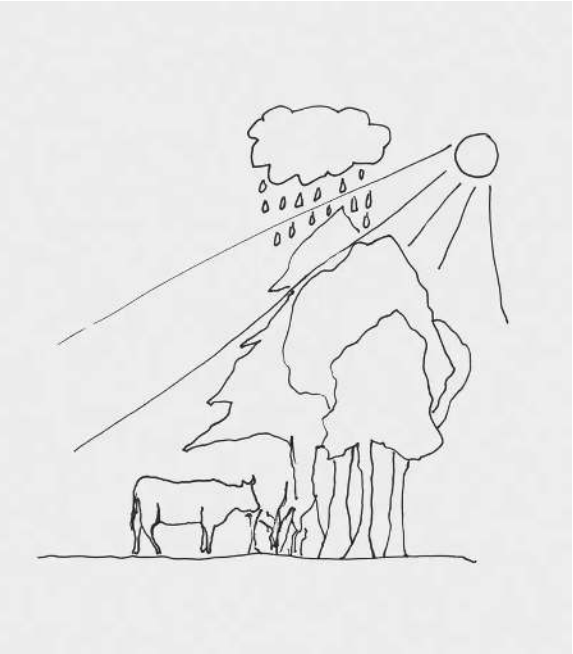
A reduction in meat consumption will lead to a multiplicity of productive agricultural practices coexisting and coworking in communities.

A cow lazily swishes its tail, now and then perceiving a distant buzzing. The drone maintains its station hovering above the herd. The images it collects are analysed with data from other animals. A few kilometers away, the farmer receives an alert, one cow is giving birth. Driving out to the farm she leaves her car and enters the realm of the cattle jumping over the broad street ditch. As she approaches the cow with his GPS tracker, he meets two hikers resting under the shadow of the trees next to the pasture. Excited about what is happening, they follow the farmer who is checking the new-born. Cattle of different sorts graze around it, while she marks it as one of his.

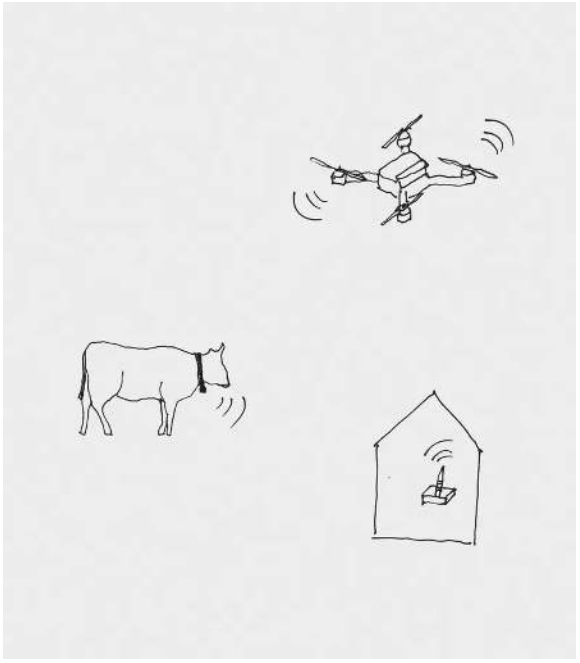


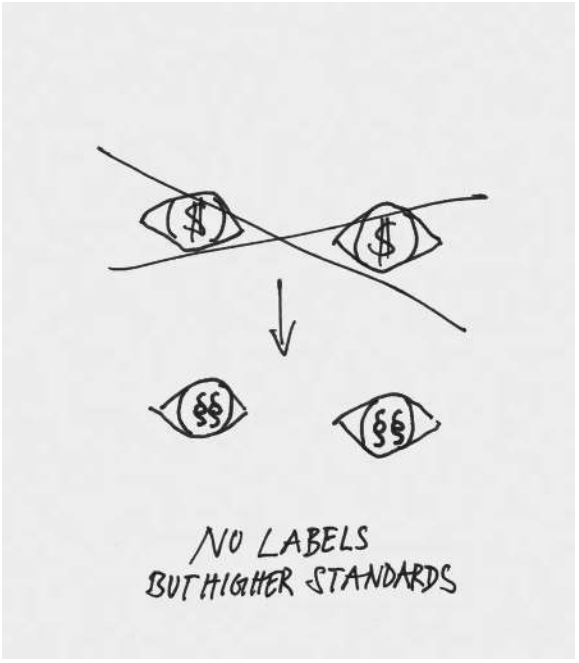






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A reduction in meat consumption seems the only justifiable development in the future, leading to a multiplicity of productive agricultural practices coexisting and coworking in communities.

DIETARY SHIFT AND CONSCIOUSNESS

A dietary shift from a meat dominated diet to a more diversified vegetal consumption will be established, using all the potential crop cultivation area for human food instead of fodder. Animals will be held only to such a degree, as no additional fodder has to be produced for them. Roughage recyclers like cattle will feed from meadows, which cannot be used for crop cultivation and simultaneously cattle produce natural fertiliser (excrements) for the crop fields. Animals like chicken and pigs will eat the surplus from human food production, by-products from cheese production, and oil press. By this, livestock becomes a productive element in the agricultural production cycle. Importation of fodder can be completely omitted.

NEW ORGANISATIONAL STRUCTURES AND NETWORKS

A new cooperative structure between farmers and butchers will be established to ensure fair prices for meat production. Through this the producers gain independency from the big retailers and can ensure more animal welfare, controlling the production chain. Smaller businesses will be able to survive and can compete with large enterprises, protected by the cooperative framework.

REIMAGINING THE IDEA OF THE COMMONS

On a land use level the cooperatives are organised in a new governance structure: a coworking network on productive commons. Whereas farmers will share big plots of pastures for herds of cows, the butchers will share the facilities for the slaughtering process. Farmhouses and butchers' remain in private hand. An additional layer of commons addresses the shared use of the landscape for leisure.

A NEW ENCOUNTER WITH NATURE

The cows will graze in herds and move freely to where the grass is high, sustaining the biodiversity of certain areas. Furthermore, forest maintenance will include the deliberate use of livestock, leading to punctual silvopastures. Cattle will find shelter under trees on the pastures and drink from natural water sources. Other animals like chicken can be kept in combination with high stem trees for fruit and nuts.

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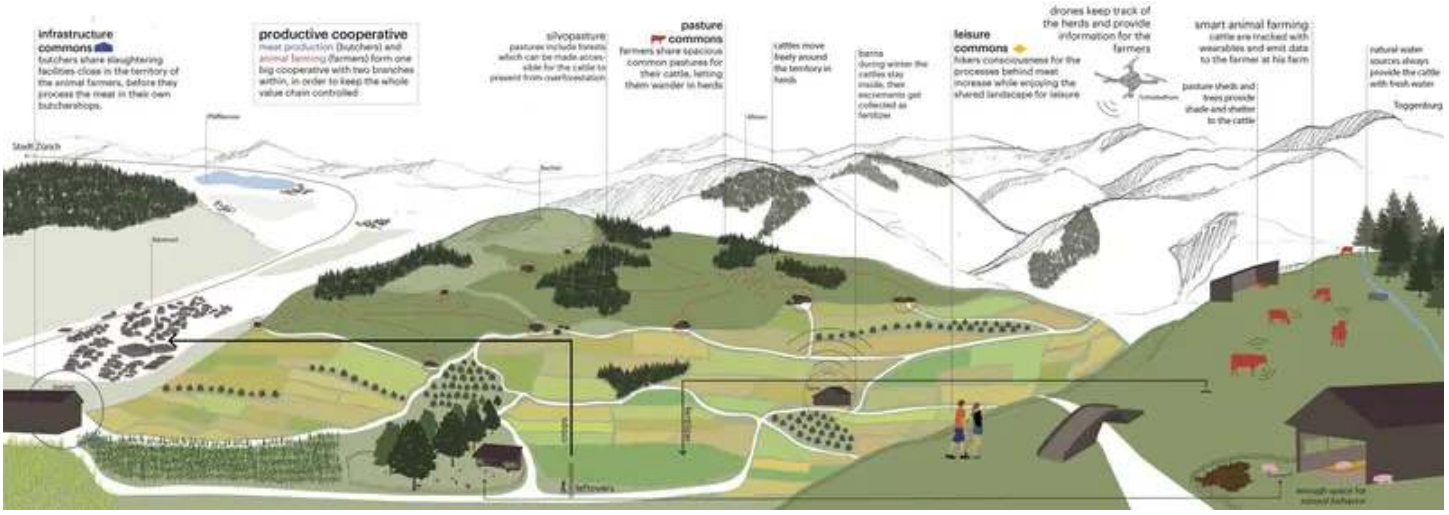
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SMART IMPLEMENTATION OF SMART FARMING

Smart animal farming will provide the means for the herd system, because farmers will be able to track their cattle by GPS and be alerted if the cattle is in trouble. Virtual fences keep the cattle within the pasture boundaries and drones deliver real time images of the herds, for identification of special events like birth. Future farms will be digitally connected for a great exchange of knowledge and data collection which helps them to increase their efficiency.

NEW LEGISLATION

On a policy level more concrete measures for animal welfare will be included into the Animal Welfacre Act in order to detach animal welfare from economic incentives. Labels will lose their meaning, whereas living standards for animals rise.



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