Societal Expectations on Structural Change in Agriculture: How can the Sector Cope with it?

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Abstract

In Germany, productivity gains and other factors induce structural changes in agriculture since decades. While the number of farms decreases simultaneously average farm sizes with respect to area and herd sizes increases. Conflicts between agricultural reality and society's perception will always surface when production methods of large farms become public and significantly divert from the societal expectations mainly if the society still have romantic views from story-books in their mind. In this study societal perception of structural change in agriculture is analyzed using a mixed method approach to identify the main conflicts and to evaluate options to cope with these. In the focus group discussions as well as in the online survey a rejecting or critical attitude towards structural change in agriculture was stated. Structural change in agriculture was often associated with 'mass production', 'mechanization' or 'agrarian factories'. Participants requested a restructuring of agriculture towards smaller and more diversified farms; however, most are aware that the technical progress require also adjustments in the agriculture. As expected, results do not provide an easy solution to cope with societal expectations. Responsibility for a better alignment of structural change to societal expectations is seen multi-layered: The government, the farmers, the processing industry as well as the consumers seem to be in demand.

Keywords:Structural change in agriculture, societal expectations, responsibility, mixed method approach

1 Introduction[1]

For decades, structural change is an inherent feature of German agriculture driven by productivity gains and other factors. While the number of farms decreases average farm sizes with respect to area and herd size increases. Hence, the public view on agriculture is different: It is often reflecting a picture book perception preferring very small farm sizes. Conflicts between agricultural reality and society's perception will always surface when production methods on large farms become public and significantly divert from the societal expectations. This happens regardless the fact whether the practice is within legal bounds or not, driven by the ongoing structural change forcing farms to grow. Currently, the number of citizens' protests against new barns or slaughterhouses rises rapidly and thus, hindering adjustment processes. Growing societal awareness for animal welfare and environmental protection additionally fuels these conflicts further as does the widespread myth that small farms are good and large farms are bad.

In this study societal perception of structural change in agriculture is analyzed to identify the main areas of conflict and to evaluate options to cope with these. To achieve the aim a mixed method approach is applied. In 2012, six focus groups were conducted to gain insights into the understanding of traditional and modern agriculture. Further, differences in characteristics of traditional and modern agriculture were discussed and evaluated. Knowledge captured in the focus groups was used to develop a quantitative online survey. Then

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findings from both approach were employed to derive possible means to deal with the problems of structural change in public perception.

The paper is structured as follows. Adherent to the introduction a very brief overview about the literature is provided in section 2 followed by a description of the chosen approaches to enlighten the societal perception of the structural changes in agriculture in section 3. Outcomes hereof, are presented in section 4 and conclusions in the final section 5.

2 Literature review

For decades structural adjustments shape the appearance of farms and agricultural production: the number of farms decline, but average farm sizes increase, all driven by technical progress and productivity gains (Schöpe, 2005); however structural change implies, in general, a negative image, associated with the terms like loss in the number of farmers („Bauernsterben“) or agrarian factories („Agrarfabriken“) (Balmann, 2008). Although this development is not limited to agriculture, but to be found in all economic sectors it receive more public perception as food production and processing is regarded as something special (Hartenstein, 1997). The term does not only refer to the primary agricultural production itself, but also its integration into the supply chain as well as its increasing concentration and specialization (Balmann, 2008).

In the past years, societal expectations concerning agriculture underwent several significant adjustments. In the 50ies and 60ies of the last century, consumers requested farms to produce efficiently in order to provide enough food at low prices. Whether that was done in an ‘industrial’ manner or ‘traditionally’ was not of reference at all (Ziche, 1964: 49/50, cited in Helmle, 2011: 13). However, one of the main objectives of the farmers union, at that time, was to the preserve a high number of farms (Helmle, 2011). Later, in addition to food security, environmentally safe food production gained prominence in societal perception of agriculture. Then, in the 90ies attention of animal welfare became popular (Helmle, 2011).

Although in the German society structural change of agriculture is questioned, in the general, the sector enjoys a positive image in the population (TNS Emnid, 2012; Eurobarometer, 2012; Helmle, 2011). As the study TNS Emnid (2012) depicts, agriculture is of high significance with respect to food security, German culture, standard of living and security. It is also important concerning energy supply and mitigating of climate change (TNS Emnid, 2012). Due to Eurobarometer (2012) the population perceives that agriculture contributes towards preservation of rural areas and the beauty of the landscape. In addition, agriculture supports the environment (Eurobarometer, 2012).

Asked concerning their societal wishes and notions respondents would have required alternations in farming systems with respect to a good governance in keeping farm animals. In addition, the society expects farmers could do more to overcome environmental problems and to restrain from the use of GMOs. In contrast, farmers exceed expectations concerning technical progress, entrepreneurship, market orientation, and in the production of low priced food (TNS Emnid, 2012).

Citizens‘ opposing attitudes towards technical progress is mirrored in their critics on larger farmers and explicitly on large animal husbandries (Kayser et al., 2012). Although the majority of the population (73 %)

presumes animal husbandry does not provide any harassment to their neighborhoods (TNS Emind, 2012), citizens based in smaller regions tackled directly have a different perception. Reconstructions buildings and constructions of new ones in rural areas often provoke public protests due to expected nuisances by to smells, noises, or bad conditions in husbandry (Gerlach, 2006); although driving forces are often personal consternations to be described by the term NIMBY (Not In My Backyard). Most opponents do not have any problems with new stables as long as they are built elsewhere (Gerlach, 2008).

To explain the public rejections of bigger farms is not trivial. Growth will lead to an increased dualism meaning that a small number of farms produce a larger share of commodities while the production share of the much higher amount of smaller farms is insignificant (Balmann, 2008). Public perception will be distorted by the dualism, as the higher number of smaller farms will be recognized more strongly. Intensified will be the effect by an increase in farm types not complying with the public concept of a family farm (Birner, 2012: 25). Widely spread myths like small farms are good farms and large farms are bad farms add to the public refusal of structural changes. Large farms are often discerned as purely profit maximizing, estranged from nature and addicted to the use of genetically modified organism. Applications of chemistry and industrial organization on farms is rejected. Small farms are associated with an quaint way of living and working; peasants are rumored to have high work ethics, are down-to-earth and symbolize tradition. They are presumed to be in harmony with nature, healthy, as well as living a meaningful and versatile live. At the same time their way of living reflects an simple and modest attitude (Rentsch, 2008, cited in Börner, 2012). It is a way of living people, in general, strive for, but shy away from, if they are not forced by reality to live it.

3 Data and Methodology

Results from the literature review were used as input to apply a mixed method approach. In a first step, focus group discussions were conducted to gain an understanding how the German society presumes traditional and modern agriculture. Written guidelines for the focus groups were established to a great deal fed by the review. By comparing perceptions of both forms of agriculture participants' attitudes towards structural change were revealed. Further, differences in characteristics of traditional and modern agriculture were discussed and evaluated. Then in a second step, knowledge gained from the focus groups was used to develop a quantitative online survey aiming to underpin gained results or qualify them.

Focus groups are a qualitative method consisting of moderated discussions. In the discussion a quite limited number of participants discussed topics concerning their perception of traditional and modern agricultural, about significant items to be regarded and characteristics in which both forms of agriculture varied, what topics would be the most important to the citizens and which changes they as citizens would wish for. As such, focus group discussion is "a method for eliciting respondents' perceptions, attitudes and opinions" (Wilson, 1997: 209) and captures group interactions to better mine for participant's motives driving their behavior in the very end. Because participants are confronted during the process with other participants' opinions, attitudes or perceptions, and, in turn, are required to defend and justify their own opinions, attitudes or perceptions "individual response becomes sharpened and refined, and moves to a deeper and more considered level" (Finch et al., 2003).

Six focus groups were carried out in July and August 2012 in the German cities of Magdeburg, Kassel and Münster, two focus groups in each city. The selection of cities was to reflect different farm size structures, ranging from a high share of large farms in Magdeburg, via a more evenly distribution in Münster to an area with a higher share of smaller farms close to Kassel. Focus groups involved up to 8 participants and lasted about 90 minutes. Participants were acquired by an private agency which used an online panel, but some selection quotas and limits were set: participants were supposed to have no professional background in agriculture, in addition gender and age shares were indicated. All discussions were documented in audio and video format, and then, later recordings were transliterated and analyzed employing MAXQDA.

Based on the outcomes a online survey was developed and was carried out with 1519 adults in Germany in the spring 2013. Participants were almost equally distributed regarding age, gender, region and income. Half of the participants were male and average age was 42.25 years. Younger persons were slightly overrepresented compared to German population while participants older than 65 years were underrepresented. Almost 70 % were employed (fulltime or part-time), reflecting an over-representation. With regard to the region where participants were living and their monthly household net income distribution was almost representative.

Respondents were faced several seven-point likert scales about their attitudes, perception and expectations towards structural change in agriculture. A special point surveyed was the question about the consequences of structural change and the impact for agriculture. Socio-demographic variables were questioned as well. The complete questionnaire was tested using cognitive pretesting. Items regarding attitudes, perceptions or expectations were pretested using the Kaiser-Meyer-Olkin test (KMO), the measure of sampling adequacy (MSA) test and the Bartlett test of sphericity.

4 Results

Focus groups

Based on the transcripts, statements on traditional agriculture were grouped into categories. Concerning size, traditional farming was perceived as smaller *(traditional farming I presume it is done in small space „Bäuerlich verstehe ich mehr […] im kleineren Rahmen" (KS1*)). With respect to income generation, traditional farming was seen to provide insufficient income and only products for own consumption (*for own consumption, as hobby or as an addition, not as full-time job „für Eigenbedarf und Hobby oder so nebenbei, also nicht als Haupterwerbsquelle" (MS1)*, with high labor input and a diversity of activities *(where one has to do everything oneself, where one milks the cow in person „Ja, wo man das selber macht, […] wo man also die Kühe selber melkt"* (MS2)). Most participants believed that traditional farming was in the process of dying or has been transformed into modern agriculture (*there will be nearly no farmer mowing hey with a scythe anymore „es wird ja kaum jetzt einen Bauern geben, der noch mit der Sense und so das Heu mäht"* (KS1)). Often mentioned in connection with traditional farming was the term family business, where the participations presumed that several generations live and work together (*Traditional farming is a family business where one earns enough to survive „Und diese bäuerliche Landwirtschaft […] ist Familienbetrieb […] (der) so viel erwirtschafte(t) […], dass man überleben kann."* (KS1)). In addition, participants gave nostalgic descriptions although, it was quite clear to them that they were unrealistic (*A big farm house, a stable, and all day long animal noises. […] but this is, to my mind, a picture of the past. „Ein großes Bauernhaus, eine Scheune, Stall und ja von morgens bis abends*

Tiergeräusche.[…] Aber das[…] ist meiner Meinung nach ein Bild der Vergangenheit" (MD1). Some participants linked improved animal husbandry to traditional farming (*that the animals can ran around and that they are nicely supplied, because, mostly in mass production, there is no space, but there is also missing the treatment „Dass die (Tiere) ein bisschen laufen können und dass die gute Versorgung haben, weil größtenteils, auch bei dieser Massentierhaltung, ist es ja nicht nur unbedingt der Platz, es ist ja auch die Versorgung"* (MD1). Most discussants saw no link between the type of agriculture and the marketing of products, but at least some linked traditional farming to direct marketing (*that they start a farm shop „dass sie einen Hofladen beginnen."* (KS2))

In contrast, terms used in connection to modern farms refer to machinery and mechanization like e.g. in modern agriculture, that is really the case, one can cultivate, I do not know how much hectare of land with two people. That one can sit on a tractor, with air-conditioning and GPS and the thing runs on its own („moderne Landwirtschaft, das läuft ja dann wirklich so, dass man, was weiß ich, wie viel Hektar Land mit zwei Mann bewirtschaften kann. Dass man dann im Traktor sitzt, mit Klimaanlage und GPS und das Ding fährt von ganz alleine"(MD1)). Further mentioned were that modern farms are large and practice mass production of crops and livestock (I would attribute modern to mass production of animals „Ich würde zu […] modern die Massentierhaltung zuordnen." (MS1), *modern agriculture are perhaps more the big companies „moderne Landwirtschaft ist vielleicht mehr so die großen Konzerne"* (KS1)).

With respect to crop production higher input of chemicals was associated with modern agriculture whereas its application was often criticized (*To kill the little bit of weed, that grows next to it, to kill it first and then later to thresh, that is something I cannot understand, why one has to pollute it with some pesticides „Um das bisschen Unkraut, was dazwischen aufgegangen ist, eben halt abzutöten und erst dann zu dreschen. Das ist für mich auch was, was ich absolut nicht verstehen kann, wozu das dann jetzt noch mal mit irgendwelchen Pestiziden belastet wird."* (KS2)). For some participants, profit orientation and competition were characteristics of modern farms *(The modern ones […], are only oriented towards profits „Die modernen […], die nur auf Gewinn aus sind... "* (KS1), *I link modern agriculture to the fact that animals are not the main issue, but the main topic is, first of all, money „verbinde ich (mit) […]moderne(r) Landwirtschaft, sodass es nicht mehr um die Tiere […] geht, sondern einfach wirklich nur erst mal so um das Geld."* (MS2)). Also a few participants perceived specialization as a further attribute *(But what I do not like at all is really the specialization […] „Aber schlimm finde ich halt wirklich die Spezialisierung […]* (MS2). Animal husbandry is described by an increased use of antibiotics and a minimized contact toards animals *(No farmer is looking into (the stable) „Da guckt kein Bauer mehr rein […] "* (MD2), *soon the humans do not need, for example, any antibiotics anymore „Die Menschen brauchen z. B. bald Antibiotika nicht mehr* " (KS2)).

In a free association about traditional and modern agriculture the participant were asked to reflect on characteristics with respect to both types of agriculture. However, after discussing the topic size the participants intuitively used the word small and large scale farms during all further discussions. As one important discriminatory category the size was seen (*very significant the size of the firm […] Also the degree of mechanization „ganz deutlich die Größe des Unternehmens […] Auch der Automatisierungsgrad."* (MD1). Another characteristic allowing separation between the farm groups was monocropping. (*And a modern farm is specialised „Und der moderne Betrieb ist eben spezialisiert "* (MD1)), marketing channels *„traditional farming is if the way the product takes is, in principle, shorter […] and modern is if the amount of the products is higher and are delivered to a big company „bäuerlich ist, wenn der Weg, den das Produkt (geht) eher kürzer ist […] und*

modern ist, wenn die Produkte […] in der Anzahl höher sind und dann an einen großen Konzern abgegeben werden" (MS1)) und animal husbandry (*traditional farming is to me where an animal really has a bit freedom „also bäuerliche Landwirtschaft ist für mich dann wirklich noch so'n bisschen wo Tiere ein wenig Freiheit haben"* (MS1). Characteristics and attributes can be found in table 1.

Table 1.
Criteria mentioned by participants concerning traditional and modern farming

Categories for differensation	Traditional farming	Modern agriculture
Size	Smaller	Larger
Level mechanization	Lower	Higher
Specialization	Marginal	Intensive
Marketing channels	Direct marketing	Sales to big companies
Animal husbandry	Free-range	Kept only in stables

Source: Own results.

In addition to characteristics to differentiate farms in the view of the participants the moderator presented criteria for a differentiation and asked the discussants to comment on attributes and their tendencies. Criteria were selected on base of the literature review. Concerning a number of items all participants had the same perception (e.g. concerning size) with respect to others, attributes and their values differed across the participants (see table 2).

Considering size there was no divergence in the opinion among the participants. All regarded modern farms as being larger than traditional ones. Terms used were: *they get larger and larger („die werden immer größer* (MS1)) or *traditional (farms) have been mostly smaller family businesses (Traditionell war ja meistens noch ein kleiner Familienbetrieb*" (MD2)). Comparable is the situation with the criteria 'specialization' and 'freedom to decide'. Modern farms are seen as specialized and traditional farms as diversified (*that the smaller do more and the larger ones are more specialized („dass kleinere mehr machen und die großen sich auf […] weniger spezialisieren*" (MD1)). In general, discussants presumed that traditional farms have more freedom to decide than modern farms as the later are specialized and deeper integrated with the buyer of their goods (*there is the traditional farm more flexible, for large scale farms, there are distinct markets with needs to be fulfilled* (*„da ist man in einem bäuerlichen Betrieb wahrscheinlich ein wenig variabler, für den Großbetrieb gibt es bestimmte Märkte und die muss er erfüllen.*" (KS2)).

With respect to a second group of criteria participants did not display a clear-cut attitude towards them. Like for the criteria 'income' and 'working conditions'. Some expressed that income of the traditional farmers would be smaller (*I presume that especially the larger farms […] have significant higher income* (*„ich gehe davon aus, dass gerade große Betriebe […] wesentlich höheres Einkommen haben*" (MD1)).Hence, other participants thought it was just the other way round (*modern farmers as also they are not independent anymore they do not have as much income as traditional farmers „bei den modernen Bauern auch dadurch dass sie halt nicht unabhängig sind, […] dass die nicht mehr so viel Einkommen haben wie eigentlich ein traditioneller Bauer*"(MS2)). Such contradicting statements across participants were exceptions; however, some criteria did not allow, to the mind of some discussants, a discrimination between modern and traditional farms. That applied especially to the criteria 'regional discrimination', 'plant production', 'environmental impacts', 'full-time/part-time farms', 'governmental transfers' and 'find a successor'.

Some specialities occurred in connecting with some of the presented criteria. Regarding the criteria 'level of mechanization', 'animal husbandry', `sanitary conditions' and ‚produced quantity of food', the discussant were unable to detect stringent contrast between traditional farms and modern ones. As an example may serve the term 'animal husbandry'. In principle, animal husbandry was presumed as being better on traditional farms and worse on modern farms (that in traditional animal husbandry animals have more space, more room, and that in modern ones […] all animals are squat together *„Dass bei der bäuerlichen Tierhaltung die Tiere mehr Raum, mehr Platz haben und dass bei der modernen, […] dass alle Tiere aufeinander hocken*" (MS1)). Hence, barns of modern farms were regarded as having higher quality while, at the same time, barns of traditional farms were not perceived as bad (open gates for cows […], automated milking plants […], automated brushes […] for pigs, toys […], there have been quite some improvements „sogenannte offene Stallhaltung für Kühe […] einen automatischen Melkstand […] automatische Bürsten […] bei den Schweinen, […] mittlerweile Spielzeuge […] Also man hat da schon ‚ne ganze Reihe von Verbesserungen gemacht." (KS2)). Modern farms were categorized as hygienic and unhygienic at the same time (risk in large farms, that there will be more cheated „Die Gefahr in großen Betrieben, dass mehr gepfuscht wird." (MD1)). During discussions on 'produced quantity of food' two contrasting aspects were revealed with respect to traditional farms: some participants expressed the view traditional farms could produce enough food to supply the population (it is sufficient when there are only small farms who could produce also required quantities like the large ones „Dass das ausreichend wäre, wenn man kleinere Betriebe hätte und dass die genauso die benötigte Menge an Nahrung produzieren könnten wie die paar Großen." (MS1)). Other participants doubted the ability of traditional farms to provide enough food. (I think that this quantities of food, which are required, could not produced at all, in this traditional way „Ich denke, dass die Massen an Lebensmitteln, die halt benötigt werden, auf diese konventionelle kleinbäuerliche Weise einfach gar nicht produziert werden können" (KS2)).

Conflicts between agriculture and the society are to be uncovered by asking the participants about their wishes concerning the appearance of agriculture. Most often stated was a request to improve the animal husbandry covering as well use of antibiotics, transport conditions and conditions in slaughterhouses. Typical remarks were: *pig fattening unit with more than 3000 pigs, that is alarming […] ("eine Schweinemastanlage mit 3000 Tieren. […] Das ist schon sehr bedenklich"* (MD1)) or *there should be more slaughterhouses on-site, they transport the animals across whole Germany, so they need to suffer for 1000 km, before they will be finally put out of misery („Es sollte viel mehr Schlachthöfe […] vor Ort geben […] die karren (die Tiere) durch ganz Deutschland […], und dann müssen die Tiere irgendwie schon 1000 Kilometer lang leiden, bevor sie dann endlich erlöst werden"* (MS1)).

A second category comprises wishes expressing calls to shift away from mass production and towards smaller and more diversified farms (*mass production should be just abolished „Es müsste halt einfach die Massentierhaltung abgeschafft werden*" (KS1), *that this small farms do not have such intensive mass production „dass diese kleinen Betriebe nicht so starke Massentierhaltung pflegen"* (MS1). Statements concerning the economic situation are outlined in the third category, e.g. criticizing greed for profits at the expense of animals and plants, but also statements displaying a certain understanding of economic realities (*farmers compile profits on the expenses of others „Die (Landwirte) müssen auf Kosten von anderen immer mehr Profit machen"* (KS1), *I can understand farmers saying that they plant those products yielding the most money „Ich kann ja aber jeden Bauern verstehen, der sagt, er pflanzt das an, womit er das meiste Geld macht*" (KS2)).

Some participants wished for a more regional production and more ecological products. Some of the statements reflected more fears than wishes. There statements dealt with missing successors of farmers or the reluctance of young people to work in agriculture (*I believe agriculture will nearly die […], but in the end, our children will eat in the very end only pills and capules „Ich glaube schon, dass die Landwirtschaft eigentlich fast aussterben wird. ..., aber unsere Kinder werden am Schluss nur noch Tabletten und Kapseln essen"* (MD2)). With respect to plant production the participants opted for a lower input of fertilizer and pesticides, no utilization of genetically modified plants and fewer interferences with nature (*the cereals and others, that they are not genetically modified, and that there are not too many interventions in the nature „die Getreidesorten und so, dass die […] nicht genmanipuliert sind […], dass halt nicht zu viel in die Natur eingegriffen wird"* (MS2). During the discussions a more intensive contact between agriculture and the society was demanded and they hoped for a better societal understanding of agriculture and a higher appraisal of food (*in the very end agriculture needs to be enlightened to higher degree „Da müsste eigentlich die Landwirtschaft im Endeffekt ein bisschen mehr aufklären*." (MD2)).

Table 2.
To the participants presented criteria and the participants' valuation

Criteria	Traditional farms	Modern farms
Size	smaller	larger
Specialization	less specialization	more specialization
Level of mechanization	limited mechanization mechanization	higher mechanization
Regional distribution	more often in Bavaria, Hessian	more often in Sachsen-Anhalt, Mecklenburg-Vorpommern
	no difference, more depended on soil quality, transport infrastructure, land prices and income	
Income	lower income higher income risky income	higher income lower income stable income
	no difference, more depended on production program, diversification, region, entrepreneurship, landowner	
Working conditions	insufficient working condition better working condition due to self-determination	better working condition insufficient working condition
	no difference, similar working condition	
Animal husbandry	better: more contact, more space and free-range	worse: less space, no free-ranging, more medical treatment better stables
Plant production	less chemical treatment	less chemical treatment, more genetically modified organisms
	no difference, depends more on ecological or conventional production	
Sanitary conditions	worse sanitary conditions	better sanitary conditions worse sanitary conditions unclear conditions
	no difference, same regulations for all	
Impact on environment and on overall appearance of the landscape	small impact	bigger impact
	no difference, difference between present and past	
Full-time/ part-time business	part-time	full-time
	no difference, depended on production program	
Governmental transfers	less transfers	more transfers
	no difference, regulated in the sa way for all	
Produced quantity of food	produce sufficient problematic if they are the only producers	
Find successor	Difficult	easier
	no difference, difficult with both	
Freedom to decide	more freedom	less freedom

Source: Own results.

Online survey

The online survey confirmed results of the focus groups. Outcomes indicated that the society does not perceive agriculture just in black and white. Answers support the fact that agriculture has, in general, a positive image. But respondents agreed also to very sceptical statements and affirm quite negative aspects. Hence, also the dilemma of agriculture is revealed: only less than 40% of the society agrees to the statement 'most important job of agriculture is to produce lots of food' meaning that also other topics should be achieved by agriculture which are probably as important. Nearly 35 deny the importance of food production. So to those people the production of public goods must be more important. As such, this statement explains results or high lightens several other outcomes. If food production is not so important anymore compliance with rules, their controls and a more severe punishment of their breaching will gain much more in importance in the view of the public. This may tackle animal welfare, but also the perception of structural changes diverting of the societal picture.

But also positive aspects of agriculture are pointed out. More than 70 % agree that agriculture has an important impact on landscape's preservation. And almost as much participants say that it is right that farmers get public support due to guarantee food security. Appreciation of agriculture is an important underlying feature of this statement. It seems that agriculture is seen as something very positive that has to be valued.

Despite of these quite positive views there are sceptical remarks towards structural change. As already depicted in the focus groups statements like '50 years ago animal husbandry was better' or 'animal husbandry is better on small farms than on big ones' are met with approval. Both statements were confirmed by about 60 % of the participants and indicate that at least for animal husbandry structural change is accompanied by concerns while traditional agriculture is perceived as the 'good old days' without to realize that standards for humans and animals are nowadays better in various ways. One effect of agricultural change is an intense modernisation of agriculture. More or less everything might be done with machines. One statement asked whether farmers lost their relationship to their job due to modernisation. The results is not that clear. More than 40 % agreed but almost 30% disagree. It seems to be that modernisation is not seen as a root for all evil in general.

In the current discussions it seems that there are numerous people who think successful agriculture is mainly a question of farm size. This point of view cannot be confirmed by our results. About 60 % agree that farmers' success does not depend on farm size but on their know-how. One problem forming a source for sceptical remarks may lie in the fact that most people have no contact to modern agriculture. Getting in touch could reduce prejudices or create understanding. And it could be concluded that society even wants to get in touch with agriculture as almost 80 % ask for more contact and want the sector to become more active.

Consumers' role and its impact on today's agriculture is also critically. More than 70 % state that many consumers are not willing to pay more money for increased quality. Almost the same amount realize consumers responsibility for mass production as they are just looking for cheap products. Of course an agreement to these statements do not mean that respondents will react in an different manner when they go shopping. But it reveals that, at least in theory, consumers respectively citizens understand that high quality cannot be produced with low cost.

Within the focus groups several requests were raised regarding future agriculture. These were confirmed by the online survey and cover two main aspects: fulfilment of obligations and animal welfare. In general, participants demand more and stronger controls to guarantee compliance with legal obligations and would accept subsidies to foster animal welfare. The most clear cut result was found concerning the requirement that the compliance of regulations has to be monitored more strictly. More than 90 % of the participants agreed and just 2 % disagreed. This statement explicitly focuses on already existing regulations and does not ask for new ones. This results shows that there is a lack of confidence in farmers compliance with regulations. Consequently about 80 % ask for a more severe punishment of farmers if the obligations are breached. With respect to animal welfare stronger obligations are required by more than 80 %. But also the government is seen responsible as almost 90 % agree that the government has to ensure that a species appropriate husbandry is worthwhile for the farmers. It seems obvious that societies requirements cannot be realized by the farmers alone. At this point farmers, consumers and the government have to consider individually their contributions.

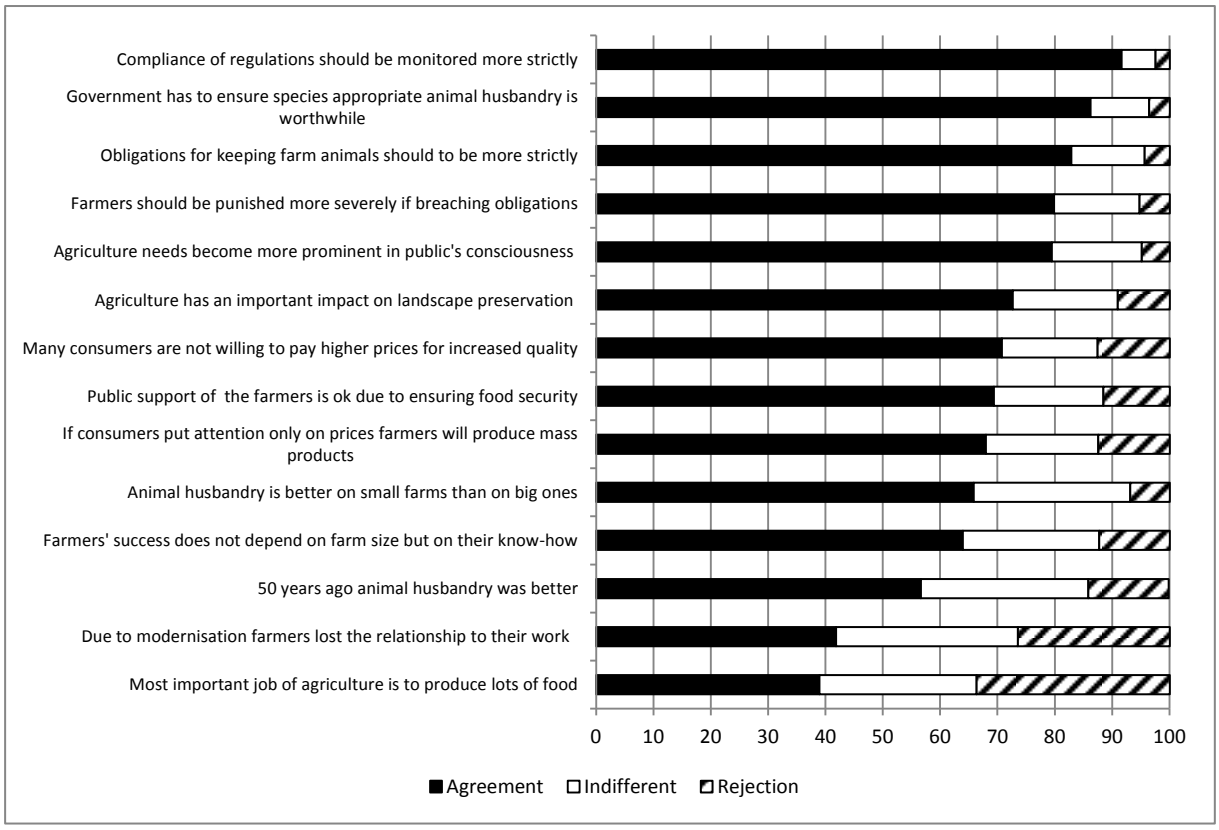

Figure 1. Statements regarding structural change in agriculture
Source: Own calculation.

5 Discussion and conclusions

Aim of the study was to capture the opinion of the society in perception and assessment of structural change in the agriculture and to derive demands for changes and amendments. As expected, results do not provide an easy solution to cope with societal expectations.

In the focus group discussions as well as in the online survey a rejecting or critical attitude towards structural change in agriculture was stated. Structural change in agriculture was often associated with structural change in animal husbandry. Mentioned statements in this respect were often 'mass production', 'mechanization', 'specialised', 'large', or 'agrarian factories'. Topics were also diversification, genetically modified organisms, inputs of fertilizer or pesticides. Those results were confirmed by the online survey: More than 90 per cent of the respondents requested the compliance with regulations should be monitored more strictly. Over 80 per cent of the participants agreed that specie appropriate animal husbandry should be better paid for and that requirements for animal husbandry should be more severe. About 80 per cent demand that agriculture should do more to acquire public consciousness. At the same time only 10 per cent of the respondents rejected governmental transfers.

Participants requested a restructuring of agriculture towards smaller and more diversified farms; however, most are aware that the technical progress require also adjustments in the agriculture. Nevertheless, the view on agriculture, in general, was shaped by romantic views, with peasant farms, diversified, and small scale.

Responsibility for a better alignment of structural change to societal expectations is seen to lie with the government, with farmers and processing industry as well as with consumers. The government could in the view of the respondents change by applying caps to transfers. Farmers could aim less towards profit maximization and consumers could change their buying decisions. Market segmenting and labelling to fulfil societal expectations might be an option; however, demand will be limited to a smaller group of consumers due to other restrictions and international competition. Options to limit structural changes by applying upper limits on sizes may be alluring but will be doomed by economic realities. Hence, a better option may be the restructuring of direct payments towards supporting to fulfil societal expectation. And more, the agricultural sector should consider treating breaches of legal obligations within the sector with severe concern as it affects all farmers.

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