



Stefan Mann | 3. März 2021

Bericht

A public economy perspective on private food certification and the role of the state¹

Learning Field Report 6

Referenz/Abkürzungen:

1. A brief introduction to welfare-oriented public economics

The history of the 20th century has shown that markets, in general, do a better job in distributing goods and services than centrally planned economies. While some political economists developed models to show the superiority of market-based distributional systems (Hensel, 1954; Gutmann, 1968; Hof, 1991), the inability of socialist governments to sustain centrally-planned economies, particularly under democratic conditions, may serve as the ultimate proof of this claim. This basic principle, however, gives room to a number of “exceptions” for which a broad consensus exists that an intervention of governments in the provision of goods and services increases societal welfare. These circumstances are to be summarized subsequently and will be related to trade policy design.

¹ The report is part of the NRP 73 project «[Sustainable Trade Relations for Diversified Food Systems](#)», funded by the Swiss National Science Foundation (SNSF), and led by Dr. iur. Elisabeth Bürgi Bonanomi of the Center for Development and Environment (CDE) at the University of Bern. The NRP73 project is hosted at the CDE.

Agroscope

Stefan Mann

Tänikon 1, 8356 Ettenhausen / Schweiz

T: +41 58 480 32 38, M: 079 711 60 26, F: +41 52 365 11 90

stefan.mann@agroscope.admin.ch

www.agroscope.ch | gutes Essen, gesunde Umwelt

1.1 Reasons of the state to intervene

1.1.1 Maintaining competition

Both merging companies and the breakdown of competitors may lead to situations in which monopolies (one supplier) or oligopolies (few suppliers) dominate the market. This will usually lead to deviations from the welfare-maximizing equilibrium: Monopolists maximize their profit by reducing quantities and increasing prices (Mas-Colell et al., 1995). Therefore, competition policy is widely regarded as a core brick of economic policy: mergers are, in certain cases to be avoided, and under special conditions it may even be beneficial to split an existing company in order to generate a sufficient degree of competition (Fisher and Rubinfeld, 2001).

International trade, if compared to a closed national economy, multiplies the number of competitors in a market, a thought that dates back to Adam Smith and has been prominently voiced by Helpman and Krugman (1989). Fox (1997), for example, emphasizes the opportunities through allowing additional competitors from abroad by lowering trade barriers. This even holds true if the antitrust policies of trading countries differ (Hoekman, 1999).

It is obvious that national policies may distort a fair competition, for example by granting export subsidies (Hamilton and Stiegert, 2001). However, from the viewpoint of competition policies, trade regulation should primarily be considered as a political instrument to maintain polypolistic competition under circumstances of monopolies or oligopolies within nations.

1.1.2 Redistribution

Social policy takes the largest part of the public budget in many regions of the world. This fact highlights the prominent role of the state of redistributing wealth. Different to the role of competition, there are highly different rationales as of why redistribution may be important. In a comprehensive overview, Deacon (2002) names equality, self-interest, paternalism, obligation and temporary smoothing. Complementary to this sociological perspective, economists sometimes raise the idea that the marginal utility of wealth is negative (Samuelson, 1937; Just and Peterson, 2003), so that a redistribution of resources may increase utility.

The "complex relationship between trade and inequality" (Silva, 2007; 111) has been explored both on the international and national level. It is clear, however, that trade preferences which are often granted to poor countries by more privileged countries can be used to foster economic development (Gil-Pareja et al., 2014), also by causing additional foreign direct investment (Medvedev, 2012). In addition, trade preferences can also be used to improve the situation in a country regarding human rights, if their continuation is strictly tied to human right compliance (Hafner-Burton, 2005).

1.1.3 Substituting markets

For most goods, economists agree that markets are an efficient tool to steer production and consumption. However, this does not apply for public goods, for natural monopolies and perhaps for merit goods.

Public goods are goods, which are not excludable for consumption, nor is their consumption rivalry. Parks or oxygen would be cases in point. If such products would be traded on markets, there would be incentives for free-rider behaviour, so that the provision by a central authority leads to more efficient outcomes (Samuelson, 1954). This does also imply that public goods are usually not traded between individuals or organizations.

"An industry in which multi-firm production is more costly than production by a monopoly" is called a natural monopoly. Water supply, for example, is connected with a large share of fixed costs, so that a single supplier is usually more efficient to supply water to a household than a network of competing suppliers. Similar as in the case of public goods, the inefficiency of competitive markets under these circumstances usually leads to the non-existence of international trade of natural monopolies.

Going back to Musgrave (1957; 341) who concluded from "the apparent willingness of the public to provide for a second car and a third icebox prior to ensuring adequate education for their children" that certain goods should be provided even without corresponding demand by the public, some economists and most public policy makers see goods like education, concerts or safety belts in cars as so-called merit goods. Similarly, Thaler and Sunstein (2008) argue that consumers should systematically be nudged towards certain choices. Most of these and similar debates, however, emerge on products that are not or hardly traded internationally. One notable exception are drugs as a demerit good (Tandon and Rao, 2019), but the consumption of alcohol and other drugs should probably be steered through taxes and bans rather than by discriminating against certain producers.

Referenz/Aktenzeichen:

As neither public goods nor natural monopolies are traded and trade with demerit goods is usually banned, the relevance of market substitution for steering agricultural trade is extremely low so that attention can be concentrated on other conditions.

1.2 The case of externalities

Due to the so-called jointness of production (Nowicki, 2004), it often happens that the production of goods occurs simultaneously to the production of public goods. If nobody pays for this public good, economists name it a positive externality (Pigou, 1920). Vice versa, it also often occurs that public bads (Moxness and van der Heijden, 2003) are produced during the production process. This is commonly described as a negative externality.

It is easy to ignore externalities in international trade. In many cases, the impact of the public good or bad is limited to the producing country (as in the case of local public goods). For buyers in the importing country, there is no incentive to take the externality into account when making the purchasing decision. Nevertheless, from a societal, global viewpoint it is always welfare-maximizing to internalise externalities, for example by paying subsidies for positive externalities and by taxing in the case of negative externalities.

1.2.1 Technological externalities

The concept of externalities gained prominence in the late 20th century when it became obvious that the environment suffered from the expansion of agricultural and industrial production. Ayres and Kneese criticized in 1969 that “despite tremendous public and governmental concerns with problems such as environmental pollution, there has been a tendency in the economic literature to view externalities as exceptional cases”. In the subsequent decades, economists focused on industrial emissions (Henderson, 1977), but also on externalities in agricultural production such as pesticides (Langham et al., 1972), nitrate (Horner, 1975) or biodiversity (Hanemann, 1988). As they link to physical processes, they all can be classified as technological externalities.

While a lot of efforts have been undertaken to internalize existing technological externalities, this has not been accomplished everywhere. Particularly in the Southern hemisphere, resources for an active

agri-environmental policy are often lacking. In the course of a proceeding globalization of food markets, additional negative technological externalities have been emerging. The quinoa production in Bolivia is a case in point. Quinoa had been the staple food for the Andean population for long, but it became an export good so that domestic production doubled. Jacobsen (2011) calls the resulting situation an “environmental disaster”. A lack of organic fertilizer (and an abuse of it in other cases), the destruction of the natural vegetation, the creation of various pest habitats and soil degradation are the main obstacles causing massive negative externalities in the local farming system, in spite of the considerable socioeconomic benefits of this new market (Tschopp et al., 2018).

Form a public welfare perspective, it would be the first best solution that the Bolivian government internalizes all the technological externalities of quinoa production. As this is unlikely to happen, the internalisation of an importing country would be a viable second-best solution. This could happen, for example, via an import tariff or tax that would equal the value of the negative externalities per ton of quinoa produced.

1.2.2 Non-technological externalities

The welfare of outsiders is not only affected in cases where physical substances are emitted during the production process. Mann and Wüstemann (2008) outline the existence of

- psychological externalities where people suffer because of inhumane practices done to third parties, such as child or slave labour, but also because animals are kept inappropriately,
- social externalities where production process generate or destroy social networks, thereby affecting the amount of social capital (Putnam, 2000) in a region, and
- human capital externalities where production processes broaden or narrow the knowledge about technological or biological connections.

This indicates that agricultural systems in which workers and animals are treated well, which lead to a vivid social life in the countryside and which maintain and develop a broad range of different production methods will be superior in terms of welfare generation to a system with few and abusive production practices, if the technical and environmental performance is assumed as identical.

Boasi et al. (2012) also focus on the negative externalities of quinoa production in the Bolivian highlands, but mainly on the non-technological side. They show how land conflicts have escalated, due to inefficient dispute settlement mechanisms on the one hand and an increased economic potential of

the land on the other. This qualifies as a negative social externality. As much as the internalisation of technological externalities by the importing country (if the government of the production country is unwilling or unable) would increase overall welfare, it also increases welfare if such non-technological negative externalities are taken into account

1.3 The role of sustainability

“The meaning of the term sustainable development often appears to be unclear, and accordingly largely underdetermined, ambiguous and controversial.” (Wuelser et al., 2012) This observation does not alter the fact that the concept itself has become the main reference point for a majority of policy makers and scientists. While this report has mainly focused on welfare maximization as the traditional focus of the public finance literature, scholar google reveals that in 2019 there were 26 per cent more scientific publications containing the term “sustainability” than publications containing the term “welfare”. The reliance of the United Nations on their Sustainable Development Goals which all member states of the UN adopted in 2015 has certainly strengthened the concept of sustainability and its impact.

In an attempt to translate the concept of sustainability into economic terminology, Solow (1991) suggested that sustainability is about distributional equity between generations. As much as we can free-ride against each other, we can also free-ride against future generations. Thus, the concept of sustainability can be brought into accordance with the utilitarian world view of most economists. It just integrates a dynamic component into the maximization of utility.

This enables the integration of sustainability into the rationale of intervention developed above. It remains true that externalities of production should be internalized, and if this does not happen in the country of origin, it can still happen through the importer. When quantifying the externality, however, the concept of sustainability teaches us that it is insufficient to focus on benefits and damages for our societies today. We have to take future generations and their likely benefits and losses into account. Therefore, the “system memory”, as suggested by Wilson (2008) is an important variable to understand the extent to which disruptions into the natural and social environment have remaining significance to people’s well-being.

1.4 Transaction costs or the need for simplification

Referenz/Aktenzeichen:

Several decades in which progressive governments have attempted to internalise the externalities of agricultural (and industrial) production processes have advanced our knowledge about the translation of economic theory into political actions. And while the relevance of transaction costs has been put into the scientific focus by institutional economists in the course of the 20th century (Coase, 1960; North, 1989), it was not before the turn of the century that agricultural economists acknowledged their vast importance for agricultural policy making (Mann, 2000; Rørstad et al., 2007; Mann and Wüstemann, 2008).

To summarize this latter discourse: An attempt to internalize all externalities of agricultural production as precisely as possible will lead to a huge number of programs, which, in turn, would cause prohibitively high costs of their administration, application and compliance – i.e. transaction costs. In fact, the larger and the less specific is a political scheme, the lower will be the share of transaction costs.

An application of this finding to trade policy implies that one should focus on few characteristics of a product (regarding its production process) that are clearly understandable and can be controlled by the staff at Switzerland's borders. While technological and in particular non-technological externalities are ubiquitous, it will be the challenge to identify the most significant and obvious externalities which should serve as the criteria for discrimination.

2. Applications of public economics in agricultural socioeconomics

The last decades have made it clear that the impact of production on significant environmental and social variables must not be ignored. As this may apply to agricultural production to an even stronger degree than to the secondary and tertiary sector, it was not a coincidence that the first conceptualisations occurred in the realm of agricultural policy. The EU Commissioner for Agriculture Franz Fischler opened the debate about the concept of multifunctionality as outlined by Cardwell (2003). While this debate showed that the principles of the market economy and a pledge for a strong government in agricultural policy could be brought into accordance, contemporary voices usually refer to more novel concepts as will be outlined subsequently. These concepts usually fall either into the realm of environmental (and therefore mostly technological) externalities and social (and usually non-technological) externalities.

2.1 Discourses on the role of the environment

2.1.1 Ecosystem services

While the term “ecosystem services” has been introduced by Ehrlich and Mooney (1983), it only became influential after the concept had both been qualified and quantified in the last years of the 20th century. Daily (1997) clarified that the concept of ecosystem services was created as an analytical tool to describe the trade-offs between economic and social development on the one hand and environmental amenities on the other, emphasizing the value of ecological services for humankind. Consequently, Costanza (1998) undertook a broad valuation of global ecosystem services and concluded that their value for humankind exceeded global Gross Domestic Products.

Kosoy and Corbera (2010) have criticized the concept of ecosystem services as commodity fetishism, as it neglects power asymmetries and reduces complex ecological systems to undue simplicity. Nevertheless, the concept has enabled and initiated a broad international debate about an appropriate design of agricultural systems. In a seminal paper on trade-offs and synergies between ecosystem services and agriculture, Power (2010) focuses both on the provision of ecosystem services to society like

- biological pest control due to natural enemy suppression
- pollination on which 75 per cent of crop species rely,
- the provision of sufficient quantities of clean water, as agriculture accounts for 70 per cent of global water use,
- soil structure and fertility as being prerequisite for crop nutrition and
- landscape influences,

while on the other hand mentioning ecosystem services and disservices from agriculture such as nutrient cycling and pollution and the emissions of greenhouse gases.

For any framework considering externalities for regulating trade relations, the concept of ecosystem services has the advantage of making tangible what are the side effects of agricultural production. However, by emphasizing rather goods than bads, it is approaching agricultural production from a different side than the attempt to penalize negative externalities.

2.1.2 Nature's contribution to people (NCP)

The NCP framework (IPBES, 2017) has directly emerged from the discourse of ecosystem services and also puts its focus on the value of ecosystems. It claims, however, to follow a more inclusive approach. In outlining the differences between the two frameworks, Ellis et al. (2019) emphasize the inclusion of non-material amenities such as the beauty of wildlife, Kadykalo et al. (2018) the explicit context-specific view of NCP and Diaz et al. (2018) use the example of indigenous people's contributions to illustrate the additional benefit of the approach.

As for the discourse around ecosystem services, NCP is often a mental platform to quantify the value of natural systems in its contribution to the quality of life (eg. Martin-Lopez et al., 2018). From a public finance perspective, its added value is the integration of non-technological externalities.

2.1.3 Life cycle costing

In parallel to the discourses on ecosystem services and nature's contribution to people, Life Cycle Analysis has emerged as its own scientific branch with a large group of scholars discussing the impacts of different ways of production for the environment. Within this large strain of research, there have always been a few representatives being interested in the economic issues around the environmental analysis.

The approach of life cycle costing goes back to Woodward (1997). He refers to the general need in engineering to be as cost efficient as possible and extends this approach to environmental impacts. The approach towards agriculture is certainly more pragmatic and specific than in the frameworks outlined above. Luo et al. (2009), for example, use life cycle costing to show that it depends on the crude oil price whether bagasse should be used for electricity or for ethanol production. And Mohamad et al. (2014) show the superiority of organic olive production if compared to a conventional system.

Referenz/Aktenzeichen:

Finally, life cycle costing boils down to an end-point indicator of life cycle analysis which helps to compare different production systems.

2.1.4 Summarizing remarks

The variety of frameworks indicates more some shifts of emphasis than fundamental differences in the acknowledgement of externalities. All proponents would agree to the notion that agricultural production causes a large amount of externalities. And it also will be consensual that an internalization of these externalities will create societal benefits. Options to do so in international food trade will now be explored.

2.2 Social criteria in private food certification

Both Mann (2018) and Janker and Mann (2020) have undertaken the exercise to examine sustainability labels and assessment tools in the realm of agriculture to identify emerging patterns of qualifying the social dimension of sustainability. Their findings will briefly be summarized subsequently, because social externalities should certainly be also considered when entering trade regulations.

Among 125 sustainability assessment tools claiming to apply to agriculture, 38 had to be excluded because they were insufficiently documented or because they primarily had their application in industries outside agriculture. Of these frameworks, many did not cover the social dimension of agriculture so that the analysis by Mann essentially (2018) relied on 30 different tools and labels, Janker and Mann (2020) on 34 different tools. While these tools covered an extremely broad range of different indicators, four major fields emerged where many of the tools and labels placed their emphasis:

- Non-discrimination rests on the idea of equality and covers both the gender and the race/citizenship dimension. A focal point of this aspect are wage levels. They should not differ according to gender or ethnicity.

Referenz/Aktenzeichen:

- Another important topic centred around work conditions. The careful avoidance of work hazards is a basic requirement, the liberty to organize in unions another. More ambitious frameworks would also recommend to avoid repetitive activities and to provide educational courses for workers on the farm.
- A third important topic is the avoidance of child labour. Many standards referred to the standards of the International Labour Organization, while some were even stricter.
- Some of the tools also referred to outward relations to adjacent stakeholders. In this respect, it seems particularly important that the land on which crops and animals are produced has undisputed ownership.

It should be mentioned that most of the criteria are much more relevant in the context of large-scale farming, particularly on plantations, while the relevance of small-scale family farming is limited.

3. Lessons for public criteria

This section needs to synthesize the findings from public economics with the observations from the attempts to put the requirements of a sustainable farming sector into practice. For this ambitious attempt, some basic epistemological questions necessarily have to be answered before recommendations can be voiced.

3.1 Epistemological aspects

How do the brief summaries of public finance teachings and agri-environmental and –social discourses contribute to define criteria that food products have to fulfil in order to be imported to Switzerland? The normative framework presented above will only be able to help if its basic assumptions are adhered to. This contains two important elements.

One is the utilitarian approach of public finance. This is occasionally mentioned (Butenko, 2013) and often taken for granted. However, the entire system of economic reasoning rests on the assumption that the aggregated utility of citizens/ consumers should be maximized under given circumstances. This basic principle always raises the question about the possibility to compare the utility for different individuals. While classic scholars have found different and often contradicting answers to this question (Hicks, 1939; Sen, 1970), this report follows the proposition by Mann (2007) who argues

Referenz/Aktenzeichen:

that trade-offs between individuals should rather be measured along the line of happiness (subjective well-being) than by using monetary scalings. This means that only propositions will be made which are likely to increase aggregated happiness measures. It is irrelevant if the people who are affected are residents of the export country, of Switzerland as the importing country or a third country.

The second remark that should be expressed for clarity is the assumption that the home country does not internalize the externalities that occur. Imagine a country in which rice production is connected with negative environmental externalities, maybe through nitrate emissions. If nitrogen fertilizer, however, is domestically taxed to the degree to which the damage occurs, there is neither a need nor a rationale for the Swiss government from an economic perspective to take into account that a damage is done. Given the low priority that environmental conservation has in many developing countries, this will be a rather rare case, and subsequently it will be assumed that importing countries do not internalize their externalities themselves.

3.2 Conclusions

3.2.1 Environmental criteria

An application of the propositions above means that criteria have to be defined by which products with a large environmental footprint can be distinguished to products with a higher degree of environmental sustainability. Basically, such distinctions can be undertaken by production methods (as in usual sustainability assessments) or by product groups.

While it is obvious that different production methods lead to different environmental outcomes, it is less obvious how to find indicators for international application that are fair proxies for the environmental performance. The distinction between organic and conventional agriculture is a helpful case in point. While the environmental footprint of organic farming on one hectare of farmland is clearly preferable to the footprint on one hectare of conventional farmland, this difference strongly shrinks (de Backer et al., 2009; Aguilera et al., 2014; Smith et al., 2014) or vanishes (Thomassen et al., 2008; Venkat, 2012; Birkhofer et al., 2016) if one looks at the footprint per calorie produced, because more land is needed to produce the required calories.

It should also be emphasized that it will be much easier to define solid criteria for environmental sustainability in Switzerland than worldwide. The environmental footprint of different fertilizers, pesticides and technologies strongly differs between climatic regions (Häni et al. 2005).

One globally applicable truth, however, is the difference in the environmental footprint between animal and crop products. While the performance in single environmental criteria between different production methods usually varies by a few percentage point, scientists agree that

- the expended energy for ground beef exceeds the expended energy for wheat by the factor six (Walmsley et al., 2015),
- carbon emissions of ground beef exceed that of rice by the factor seven (Walmsley et al., 2015)
- water consumption per kilogram of milk exceeds water consumption for a kilogram of wheat by the factor three (Walmsley et al., 2015) and that
- greenhouse gas emissions caused by meat eaters double that of vegans (Scarborough et al., 2014).

Therefore, a diet with little or no animal products is always much more environmentally friendly than a diet with high meat consumption (von Ow et al, 2020). Taken together, there is no doubt that animal products cause a lot more negative environmental externalities than crop products. It is certainly no mistake to take these externalities into account in trade policy, particularly when taken a utilitarian standpoint. This statement does not take into account that many ethicists doubt if raising and killing animals for human consumption is legitimate (Donaldson and Kymlicka, 2011; Visak, 2013; Fisher, 2019; Kotzmann and Pendergrast, 2019). However, the latter consideration may strengthen a possible discrimination against an import of animal products.

One may argue that a discrimination against animal products would unjustly discriminate against pastoralist systems in which grassland does not allow for the production of any food but beef or other meat from ruminants. This may be a point for an exemption of this discrimination of animal products for pastoralist systems. However, as beef production contributes much more strongly to global warming than pork or poultry production (Fiala, 2009), it would be environmentally counterproductive.

A discrimination against animal products will, of course, have considerable social implications. According to the Tinbergen rule, each objective should be pursued by at least one instrument, so that tools against negative social externalities will be considered subsequently.

3.2.2 Social criteria

It could be argued that the conditions for humans on earth are as diverse as agricultural ecosystems. However, human rights (Belden-Fields and Narr, 1992; Shafir, 2004) and human needs (Christie, 1997; Gough, 2004) are universal. It is detrimental for all children if they have to work hard when they should be attending school, and nobody enjoys receiving less pay for the same work if comparing to a colleague. It is therefore advisable to develop a certification system for social sustainability which is based on the criteria mentioned in 2.2, as the certification systems can be considered as common sense. If one relies on the most frequently used indicators, this indicates that such a certificate would only be awarded if it can be shown that

- companies in the value chain with more than ten employees provide an internationally recognized certification for workplace safety,
- all enterprises in the value chain comply with standards 100, 111, 138 and 182 by the International Labor Organization which will protect both against child labour and against workplace discrimination.
- the land on which products are produced and processed is under undisputed ownership.

It will need a trustworthy and efficient certification system to prevent opportunistic circumvention of such criteria. From a utilitarian standpoint, this should be considered as a real improvement.

4. Recommendation

The overview in Table 1 summarizes the considerations above and leads them into a possible system of tax discrimination.

	With social certification	Without social certification
Crop based	Tariff exemptions	
Animal based		Import ban or high tariffs

Referenz/Aktenzeichen:

Figure 1: Recommended import discrimination system

It has been a repeated attempt of Switzerland's government to lower import tariffs for agricultural goods in order to enable more trade (eg. Bürgi Bonanomi, 2017; Bundesrat, 2017). If crop producers produce their crops under the social certification required (see 3.2.2), they would be a target group for which lower tariffs than today should be applicable. The same applies to importers of processed goods if the agri-businesses in the chain are also certified. It would be wise to do this only to an extent that most of Switzerland's agricultural area would still be cultivated, but this does not inhibit some tariff decreases.

For crop-based products without social certification and animal products with such a social certification, the status quo could be maintained. A slight increase of today's tariffs could be defended as well.

The trade options of importers of animal-based products without social certification should certainly be made tighter. If meat, dairy products or eggs are produced without adhering to basic principles of social sustainability, these products should probably not be allowed into Switzerland. An application of higher, penalizing tariffs might be an alternative to an import ban.

References:

- Aguilera, E., G. Guzman, A. Alonso (2014): Greenhouse gas emissions from conventional and organic cropping systems in Spain. II. Fruit tree orchards. *Agronomy for Sustainable Development* 35, 725-737
- Ayres, R.U., A.V. Kneese (1969): Production, Consumption, and Externalities. *American Economic Review* 59 (3) 282-297
- Baumol, William J., 1977. "On the Proper Cost Tests for Natural Monopoly in a Multiproduct Industry", *American Economic Review* 67, 809–822
- Belden-Fields, A., W.-D. Narr (1992): Human Rights as a Holistic Concept. *Human Rights Quarterly* 14 (1) 1-20
- Birkhofer, K., H.G. Smith, M. Rundlöf (2016): Environmental Impacts of Organic Farming. eLS, <https://doi.org/10.1002/9780470015902.a0026341> (June 23, 2020)

Referenz/Aktenzeichen:

- Boasi, J., S. Fletcher, S. Hawkins, G. Jimenez, A. Raza (2012): *The Quinoa Fad: wealthy demand of a poor supply*. London: International Political Economy
- Bundesrat (2017): *Gesamtschau zur mittelfristigen Weiterentwicklung der Agrarpolitik ab 2022*. Bern: Bundesrat
- Bürgi Bonanomi, E. (2017). *Nachhaltige Agrarimporte in die Schweiz? – Eine völkerrechtliche Perspektive auf die Fair Food Idee, mit Erkenntnissen aus Feldstudien in Bolivien und Kenya*. *Blätter für Agrarrecht*, 51, S. 145-173. Stämpfli
- Butenko, V.A. (2013): *Democratic decision-making and experimentation*. Zürich: ETH
- Cardwell, M. (2003): *Multifunctionality of Agriculture: A European Community Perspective*. In M. Cardwell, M.R. Grossmann, C.P. Rodgers: *Agriculture and International Trade: Law, Policy, and the WTO*. Wallingford: CAP
- Christie, D.J. (1997): *Reducing Direct and Structural Violence: The Human Needs Theory*. *Peace & Conflict* 3 (4) 315-332
- Coase, R. (1960): *The problem of social cost*, *Journal of Law and Economics*, vol. 3, pp. 1–44.
- Costanza, R., R. d'Arge, R. de Groot, S. Farber, M. Grasso, B. Hannon (1998): *The value of the world's ecosystem services and natural capital*. *Ecological Economics* 25 (1) 3-15
- Daily, G.C. (1997): *Nature's services: societal dependence on natural ecosystems*. Washington: Island Press
- De Backer, E., J. Aertsens, S. Vergucht, W. Steurbaut (2009): *Assessing the ecological soundness of organic and conventional agriculture by means of life cycle assessment (LCA): A case study of leek production*. *British Food Journal* 111 (10) 1028-1061
- Diaz, S., U. Pascual, M. Stenseke, B. Martin-Lopez, R.T. Watson, Z. Molnar, R. Hill (2018): *Assessing nature's contributions to people*. *Science* 359 (6373) 270-272
- Deacon, A. (2002): *Perspectives on welfare*. Buckingham: Open University Press
- Donaldson, S., W. Kymlicka (2011): *Zoopolis: A Political Theory of Animal Rights*. Oxford: Oxford University Press
- Ehrlich, P.R., H.A. Mooney (1983): *Extinction, substitution and ecosystem services*. *BioScience* 33 (4) 248-254
- Ellis, E.C. U. Pascal, O. Mertz (2019): *Ecosystem services and nature's contribution to people: negotiating diverse values and trade-offs in land systems*. *Current Opinion in Environmental Sustainability* 38, 86-94
- Fiala, N. (2009): *How meat contributes to global warming*. *Scientific American Magazine* 300, 72-75
- Fisher, A. (2019): *Against killing 'happy' animals*. In A. and C. Linzey: *Ethical Vegetarianism and Veganism*. New York: Routledge

Referenz/Aktenzeichen:

- Fisher, F.M., D.L. Rubinfeld (2001): U.S. vs. Microsoft – an economic analysis. *The Antitrust Bulletin* 46 (1) 1-69
- Fox, E.M. (1997): Toward World Antitrust and Market Access. *American Journal of International Law* 91 (1) 1-25
- Gil-Pareja, S., R. Llorca-Vivero, J.A. Martinez-Serrano (2014): Do nonreciprocal preferential trade agreements increase beneficiaries' exports? *Journal of Development Economics* 107 (2) 291-304
- Gough, I. (2004): Human Well-Being and Social Structures: Relating the Universal and the Local. *Global Social Policy* 4 (3) 289-311
- Gutmann, G. (1968): Zum Verteilungsproblem in der Zentralverwaltungswirtschaft: Eine modelltheoretische Studie. *Weltwirtschaftliches Archiv* 100, 41-71
- Hafner-Burton, E.M. (2005): Trading Human Rights: How Preferential Trade Agreements Influence Government Repression. *International Organization* 59 (3) 593-629
- Hamilton, S.F., K. Stiegert (2000): Vertical Coordination, Antitrust Law, and International Trade. *The Journal of Law and Economics* 43 (1) 143-156
- Hanemann, W.M. (1988): Economics and the preservation of biodiversity. In national Academy of Sciences: Biodiversity. Washington: National Academies Press
- Häni, F., A. Stämpfli, J.R. Tello, F. Braga (2005): Sustainability assessment of six Brazilian coffee farms in Bahia and Minas Gerais. https://www.researchgate.net/profile/Francesco_Braga/publication/228985733_Sustainability_assessment_of_six_Brazilian_coffee_farms_in_Bahia_and_Minas_Gerais/links/02e7e52b1dbbcb1b45000000.pdf (June 24, 2020)
- Helpman, E. P.R. Krugman (1989): Trade Policy and Market Structure. Boston: MIT Press
- Henderson, J.V. (1977): Externalities in a spatial context: The case of air pollution, *Journal of Public Economics* 7 (1) 89-110
- Hensel, K.P. (1954): Einführung in die Theorie der Zentralverwaltungswirtschaft. Stuttgart: Gustav Fischer Verlag
- Hicks, John (1939). "The Foundations of Welfare Economics". *The Economic Journal*. 49 (196): 696–712
- Hoekman, B. (1999): Free Trade and Deep Integration: Antidumping and Antitrust in Regional Agreements. Washington: World Bank
- Hof HJ. (1991) Zentralisierung wirtschaftlicher Entscheidungen: Informationsverlust durch Freiheitsbeschränkung. In: Hartwig KH., Thieme H.J. (eds) Transformationsprozesse in sozialistischen Wirtschaftssystemen. Studies in Contemporary Economics. Springer, Berlin, Heidelberg
- Horner, G.L. (1975): Internalizing Agricultural Nitrogen Pollution Externalities: A Case Study. *American Journal of Agricultural Economics* 57 (1) 33-39
- IPBES (2017). 7 February 2017. Update on the classification of nature's contributions to people by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. Report of the Executive Secretary on the implementation of the work programme for the period 2014–2018.

Referenz/Aktenzeichen:

- Jacobsen, S.E. (2011): The Situation for Quinoa and Its Production in Southern Bolivia: From Economic Success to Environmental Disaster. *Journal of Agronomy and Crop Science* 197 (5) 390-399
- Janker, J., S. Mann (2020): Understanding the social dimension of sustainability in agriculture: a critical review of sustainability assessment tools. *Environment, Development and Sustainability* 22, 1671-1691
- Just, D.R., H.H. Peterson (2003): Diminishing Marginal Utility of Wealth and Calibration of Risk in Agriculture. *American Journal of Agricultural Economics* 85 (5) 1234-1241
- Kadykalo, A.N., M.D. Lopez-Rodriguez, J. Ainscough, N. Droste, H. Ryu (2018): Disentangling 'ecosystem services' and 'nature's contributions to people'. *Ecosystems and People* 15 (1) 269-287
- Kosoy, N., E. Korbera (2010): Payments for ecosystem services as commodity fetishism. *Ecological Economics* 69 (6) 1228-1236
- Kotzmann, J., N. Pendergrast (2019). Animal Rights: Time to Start Unpacking What Rights and for Whom," *Mitchell Hamile Law Review* 6 (1) 158-199
- Langham, M.R., J.C. Headly, F. Edwards (1972): Agricultural pesticides: productivity and externalities. In K. Bower: *Environmental Quality Analysis – Theory and Method in the social sciences*. London: Routledge
- Luo, L., E. van der Voet, G. Huppes (2009): Life cycle assessment and life cycle costing of bioethanol from sugarcane in Brazil. *Renewable and Sustainable Energy Reviews* 13 (6-7) 1613-1619
- Mann, S. (2000): Transaktionskosten der landwirtschaftlichen Investitionsförderung – ein komparativer Ansatz. *Agrarwirtschaft* 49 (7) 259-269
- Mann, S. (2007): Comparing Interpersonal Comparisons in Utility Theory and Happiness Research. *Forum for Social Economics* 36 (1) 29-42
- Mann, S. (2018): Critical remarks on the governance of sustainability – on the institutional framework of standards. *Sustainable Development* 26 (6) 509-514
- Mann, S., H. Wüstemann (2008): Multifunctionality and a new focus on externalities. *Journal of Socio-Economics* 37 (4) 293-307
- Martín-López, B., Church, A., Başak Dessane, E., Berry, P., Chenu, C., Christie, M., Gerino, M., Keune, H., Osipova, E., Oteros-Rozas, E., Paillard, S., Rossberg, A. G., Schröter, M. and van Oudenhoven, A. P. E. Chapter 2: Nature's contributions to people and quality of life. In IPBES (2018): *The IPBES regional assessment report on biodiversity and ecosystem services for Europe and Central Asia*. Rounsevell, M., Fischer, M., Torre-Marín Rando, A. and Mader, A. (eds.). Secretariat of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services,
- Mas-Colell, A., M. Whinston, J. Green (1995): *Microeconomic Theory*. Oxford University Press, Oxford
- Medvedev, D. (2012): Beyond Trade: The Impact of Preferential Trade Agreements on FDI Inflows. *World Development* 40 (1) 49-61

Referenz/Aktenzeichen:

- Mohamad, R.S., V. Verrastro, G. Cardone, M. Reine Bteich, M. Favia, M. Moretti, R. Roma (2014): Optimization of organic and conventional olive agricultural practices from a Life Cycle Assessment and Life Cycle Costing perspectives. *Journal of Cleaner Production* 70, 78-89
- Moxness, E. E. van der Heijden (2003): The Effect of Leadership in a Public Bad Experiment. *Journal of Conflict Resolution* 47 (6) 773-791
- Musgrave, R.A. 1957. A Multiple Theory of Budget Determination. *Finanzarchiv, N.F.*, 17, 341
- North, D. C. (1989). Institutions and economic growth: An historical introduction. *World Development*, 17(9), 1319-1332.
- Novicki, P. (2004): Jointness of production as a market concept. In F. Brouwer: *Sustaining Agriculture and the Rural Environment: Governance, Policy, and Multifunctionality*. Cheltenham: Edward Elgar
- Pigou, A.C., 1920. *The Economics of Welfare*. Macmillan, London
- Power, A.G. (2010): Ecosystem services and agriculture: tradeoffs and synergies. *Philosophical Transactions of the Royal Society B* 365, 1554
- Putnam, R.D., 2000. *Bowling Alone*. Simon & Schuster, New York.
- Rorstad, P.K., A. Vatn. V. Kvakkestad (2007): Why do transaction costs of agricultural policies vary? *Agricultural Economics* 36 (1) 1-11
- Samuelson, P.A. (1937): A Note on Measurement of Utility. *The Review of Economic Studies* 4 (2) 155-161
- Samuelson, P. A. (1954): The Pure Theory of Public Expenditure," *Review of Economics and Statistics* 36 (4) 387-389
- Scarborough, P., P.N. Appleby, A. Mizdrak, A.D.M. Briggs, A.C. Travis, K.E. Bradbury, T.J. Key (2014): Dietary greenhouse gas emissions of meat-eaters, fish-eaters, vegetarians and vegans in the UK. *Climatic Change* 125, 179-192
- Sen, A.K. (1970): *Collective Choice and Social Welfare* (Mathematical Economics Texts. Bd. 5). San Francisco: Holden-Day
- Shafir, G. (2014): Citizenship and Human Rights in an Era of Globalization. In A. Brysk, G. Shafir: *People Out of Place: Globalization, Human Rights and the Citizenship Gap*. London: Routledge
- Silva, J.A. (2007): Trade and Income Inequality in a Less Developed Country: The Case of Mozambique. *Economic Geography* 83 (2) 111-136
- Smith, L.G., A.G. Williams, B.D. Pearce (2014): The energy efficiency of organic agriculture: A review. *Renewable Agriculture and Food Systems* 1-22
- Solow, R.M. (1991): Sustainability – an economist's perspective. Speech at the Marine Policy Center, 14.6. 1991
- Tandon, S., R.K. Rao (2019): *Frontier analysis for state excise in India*. New Delhi: NIPFP

Referenz/Aktenzeichen:

- Thaler, R.H., C.R. Sunstein, 2008. Nudge – improving decisions about health, wealth and happiness. Chicago: Yale University Press
- Thomassen, M.A., K.J. van Calker, M.C.J. Smits, G.L. Iepema, I.J.M. de Boer (2008): Life cycle assessment of conventional and organic milk production in the Netherlands. *Agricultural Systems* 96 (1-3) 95-107
- Tschopp, M., S. Bieri, S. Rist (2018): Quinoa and production rules: How are cooperatives contributing to governance of natural resources? *International Journal of the Commons*. <https://www.thecommonsjournal.org/articles/10.18352/ijc.826/> (November 25, 2020)
- Venkat, K. (2012): Comparison of Twelve Organic and Conventional Farming Systems: A Life Cycle Greenhouse Gas Emissions Perspective. *Journal of Sustainable Agriculture* 36 (6) 620-649
- Visak, T. (2013): *Killing Happy Animals: Explorations in Animal Ethics*. London: palgrave
- Von Ow, A., T. Waldvogel, T. Nemecek (2020): Environmental optimization of the Swiss population's diet using domestic production resources. *Journal of Cleaner Production* 248, 119241
- Walmsley, M.R.W., J. Klemes, P.S. Varbanov (2005): Environmental footprint comparison amongst dairy, grain and meat products in California. *Chemical Engineering Transactions* 43, https://www.researchgate.net/profile/Jiri_Klemes/publication/284888691_Environmental_footprint_comparison_amongst_dairy_grain_and_meat_products_in_California/links/5660430008aeafc2aacaad49/Environmental-footprint-comparison-amongst-dairy-grain-and-meat-products-in-California.pdf (June 24, 2020)
- Wilson, G.A. (2008): From 'weak' to 'strong' multifunctionality: Conceptualising farm-level multifunctional transitional pathways. *Journal of Rural Studies* 24 (3) 367-383
- Woodward, D.G. (1997): Life cycle costing—Theory, information acquisition and application. *International Journal of Project Management* 15 (6) 335-344
- Wuelser, G., C. Pohl, G. Hirsch Hadorn (2012): Structuring complexity for tailoring research contributions to sustainable development: a framework. *Sustainability Science* 7, 81-93