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Emerging Private Voluntary Programs and Climate Change: The Blind-Spots of the Agrifood Sector¹

Doris Fuchs and Frederike Boll

Introduction

“Agriculture is one of the largest emitters of greenhouse gases” stated Greenpeace in its report “Cool Farming” from 2008. Considering the direct (soil and livestock) and indirect (fossil fuel use in farm operations and the production of agrochemicals) emissions from the agrifood sector, it represents between 17 and 32% of all global human-induced greenhouse gas (GHG) emissions (Greenpeace 2008).¹ Add to this the amount of greenhouse gases produced by food processing, distribution, storage, preparation, and disposal and the overall impact of food production and consumption on climate change becomes visible. At the same time, agricultural production is highly vulnerable to climate change, as the latter has been linked to the likely loss of huge areas of productive land. Accordingly, it seems pertinent to investigate the interaction between the global agrifood system and climate change in more detail.

¹ For Karsten Ronit (ed.). *Private Voluntary Programs in Global Climate Policy. Pitfalls and Potentials.*

In order to understand this interaction and identify the most crucial aspects for the analyses, one has to pay attention to the changes that have taken place in the global agrifood system in the last decades. First, due to processes of capital concentration the agrifood sector is dominated by transnational corporate actors, which have established oligopolies in almost all segments of the system, today. Second, and in conjunction with this expansion in economic power, corporate actors have assumed political power to a previously unknown degree. One form, in which they exercise this political power, is the creation and implementation of private voluntary programs, i.e. institutions defining rules and standards for the global agrifood system. These private voluntary programs have dramatically expanded in number and reach. Third, private retail food programs and standards have assumed one of the most influential positions in this setting and become a dominant structural force in global agrifood governance in the last decade.

Given that private retail food programs play such an important role in global agrifood governance today, they appear to be a particularly promising venue for investigating the interaction between the global agrifood system and climate change.ⁱⁱ After all, private retail food programs may offer a singularly effective point of intervention in reducing the greenhouse gas emissions associated with global food production and consumption. Retailers already have demonstrated their power to set standards for food production and processing with global reach. Due to the oligopolistic nature of the retail food market, these *de jure* voluntary standards easily assume a *de facto* mandatory nature. Moreover, the organizational structures for the implementation and monitoring of such rules and standards are already in place. In other words, food retail corporations today have the power and the instruments available to set, implement, monitor, and enforce private voluntary programs targeting the climate change impacts of the agrifood sector, if they want to do so. The following questions,

therefore, need to be asked: To what extent do the rules and standards set by private retail food programs address climate change issues? To what extent are they effective in addressing this issue? And what are the determinants of the extent and effectiveness of private voluntary programs in this respect?

A first glance at the empirical evidence suggests that retail food corporations are active with respect to the issue of climate change, indeed. Walmart, for instance, launched the “Sustainability 360” campaign in 2005, in which it defined the target of receiving 100 percent of its energy from renewable sources as one of three core goals (Walmart 2009). Yet, the interaction between private voluntary programs and the climate change implications of the global agrifood system has not been sufficiently systematically investigated. To date, the link between climate change, private governance, and agrifood remains a black box in academic research and on the political agenda.

This chapter aims to provide a first set of answers to the questions raised above. It analyzes a range of relevant private voluntary programs in the retail food sector, assesses the extent to which they address the issue of climate change and their likely transparency and effectiveness, and attempts to provide explanations for these developments. The chapter will show that some of the largest retailers are indeed active in this area, while many of the group programs, such as the Global Partnership for Good Agricultural Practice (GlobalGAP), International Food Standard (IFS) or the Global Food Safety Initiative (GFSI) are not. Using a broad range of criteria, the chapter evaluates and compares the different efforts systematically. Moreover, it critically reflects on activities and their range and promise of effectiveness.

In terms of explaining the coverage and stringency of private voluntary programs in the food retail sector and the issue of climate change, finally, the chapter will argue that the reasons for the lacking effectiveness and in other cases the complete neglect of climate change issues in general are twofold: First, the link between the agrifood sector and climate change is not immediately visible to the public/consumer and therefore there is a corresponding lack of pressure on the actors creating and implementing the respective private governance institutions to integrate climate change objectives. Second, addressing the most important sources of climate change in the agrifood sector would imply fundamental changes in its overall design and functioning rather than the regulation and optimization of certain specific processes. Existing private governance institutions, however, rarely (if ever) target such fundamental changes.

The chapter is structured as follows. The next section delineates developments in the role of business actors in general and retail food corporations in particular with regard to the global agrifood system and global agrifood governance. Section 3 further develops the analytical framework presented in the book's introduction and lays out a theoretical model for explaining the coverage and effectiveness of private voluntary programs, identifying the various incentive structures for firms to build and join programs. Section 4, then, assesses private voluntary programs by retail food corporations and relevant business groups and their goals and activities with respect to climate change and provides a first set of ideas for explaining their coverage and effectiveness. Section 4 concludes our chapter with a short summary and outlook.

Private Actors in Agrifood Governance

Transnational actors have been playing a pivotal role in the global agrifood system for a while now. Globalization, with the associated trends of the liberalization of trade and capital flows, has fostered the development of business actors of an enormous size and reach in the agrifood system (Bonnano, Busch, Friedland, Gouveia, and Mingione 1994). The underlying processes of capital concentration, in turn, have meant the development of oligopolies in which just a handful (or less) of these actors control a large share of the market at almost every stage of the supply chain (see Table 1).

While such oligopolies used to be more prominent in the production of input for the agricultural end of the food system as well as in the food processing stage, the process of capital concentration also became very visible at the retail end of the supply chain, in the last decade. Here, this process was facilitated and strengthened by new technological and logistical developments allowing a better control from farm to fork, as well as a competition based on quality aspects of products rather than just price (Busch and Lawrence 2005; Konefal, Mascarenhas, and Hatanaka 2005). Today, we can recognize ten large and internationally operating retail chains with aggressive expansion strategies, and experts predict further processes of capital concentration in this market (Dixon 2007).

Global reach, capital concentration and the existence of oligopolies only tell one part of the story regarding the nature of today's global agrifood system, however. Another important aspect is the dramatic expansion in private voluntary programs in this agrifood system in the last decades.ⁱⁱⁱ Via a diversity of self-regulatory measures transnational corporations (TNCs) play an enormous role in the authoritative allocation of values, i.e. the politics, of the global agrifood system today. Private voluntary programs now exist in almost all spheres and sectors of the global agrifood system reaching from the production of agricultural inputs, food

products or biofuel to traceability schemes and food safety standards created and implemented by actors at the retail end of the supply chain.

Table 1 about here

This development is all the more noteworthy, as it used to be corporate actors that were the prime focus of agrifood governance, whose conduct was deemed to be in need of monitoring and regulation. And not surprisingly so. After all, agricultural production and food provision are highly sensitive policy fields, at the core of any government's task to ensure the well-being of its population.

Today, however, these TNCs have become important subjects rather than just objects of global agrifood governance (Clapp and Fuchs 2009; Graz and Noelke 2007). Similar developments have been documented for other policy fields. The literature identifies a range of reasons for this trend. Optimistic observers argue that private actors have had to fill an existing void in public governance in order to be able to function in this global market (Biedermann 2007). Critical observers, however, point to attempts to increase market shares and rents, the wish to pre-empt public regulation, and a supportive neoliberal *Zeitgeist* as motors behind this development (Drache 2001; Gibson 1999). If we apply these perspectives to the agrifood sector, we arrive at very different expectations regarding the impact of private governance on the sustainability of the global agrifood system, of course, as well as

assessments of the democratic legitimacy of private agrifood governance (Porter and Ronit 2010).

Within private voluntary programs in the agrifood sector, retail programs play a special role, as they are able to shape incentive structures along the supply chain. Retail corporations have dramatically increased their structural power in the past decade due to the combination of the process of capital concentration, pointed out above, and their advantageous position in the market, i.e. their proximity to the consumer (Fuchs, Kalfagianni, and Arentsen 2009). Just within the period of a few years, private standards and certification systems have become powerful gatekeepers for access to the global market and economic opportunities within it. While private governance is *de jure* voluntary, private retail standards are one of the clearest examples that *de facto* it may often not be voluntary at all. Private retail food standards and certification systems define criteria for food production and processing, with an emphasis on quality and food safety issue and some attention also being paid to environmental and social aspects. Suppliers need to be able to implement the rules and standards and document their compliance if they want to be able to sell their products in the global market, i.e. be part of the supply chain of one of the major retail corporations.^{iv}

As a consequence of the enormous power, which private retail food standards exercise in today's global agrifood system, this investigation into the implications of private voluntary programs in the food sector for climate change concentrates on them. It examines whether, to what extent, and how these standards address the issue of climate change. Moreover, it attempts to provide a first set of explanations for such a focus (or lack of it) as well as assessment of the impact one can expect.

The Coverage and Effectiveness of Private Voluntary Programs

In this section, we present a theoretical framework to analyze the behavior of firms and industries to identify determinants of the evolution of private voluntary programs and examine the questions raised above. This framework includes an input and an output dimension. Input refers to whether programs address certain issues and include certain members, as well as includes questions such as the substantive stringency of a standard. Output refers to the effectiveness of programs and whether actual changes in business conduct are achieved in the course of the implementation of the agreed private voluntary program. This actual behavior is a function of the agreed standards, i.e. of the rules and membership structure, of course, but also of existing incentives and opportunities to comply with the standards, to outperform them, or to fail to comply.

In following this structure, we further develop and apply the four basic elements of private voluntary programs delineated in the introduction to this volume: designing, joining, monitoring, and complying. Thus, we treat aspects of designing and joining in the question of the determinants of input. It is slightly difficult to strictly differentiate between these elements due to the specific nature of our field of inquiry, in which designing has played a much more important role than joining, and these aspects have so far been more developed than monitoring and complying. Because of the explorative character of the research and its focus on relatively recent developments, it is of primary interest, how and why companies create and install different standards, in the first place. Individual initiatives dominate the field at this point, and those group standards that do exist have been developed jointly by the large retailers. This, in turn, implies that smaller actors along the supply chain have limited choices when it comes to the question of joining. Accordingly, the question of joining is not that

relevant in our analysis. In terms of issue coverage, in particular, the important choices are being made in the designing stage.

We treat aspects of monitoring and complying in the section on output. The question of the extent to which actual conduct is being monitored, by whom, and with what consequences, i.e. whether there are sanctions or public reporting on compliance failures, strongly influences the likelihood of the latter, and thereby the achievements of private voluntary programs. Of course, there is also an influence of monitoring and sanctioning provisions on the willingness of an actor to join a private voluntary program. Likewise, there is an interaction between what the actors creating a program are willing to subscribe to and the performance of programs. Admittedly, these interactions need to be further developed in our analysis in the future.

Input – Designing and Joining

Output of private voluntary programs, i.e. the determined standard, can be illustrated as consequence of cost-benefit analyses of participating business actors. Institutional as well as material goods are usually characterized by a bulk of property rights which show different characteristics regarding their divisibility and usability (Fuchs 2003). Governance institutions, which at first sight serve the provision of public goods, have private benefits as well. If a company can reduce the risk of a scandal resulting from ecological and economic harm by, for example, introducing a system fostering food safety or reducing the climate impact, then this system will generate not only better food safety or less environmental pollution as a good for society but also a private benefit for the company. Likewise, the basic improvement of a company's image as a provider of high quality products and a good steward to the

environment, the opportunity to gain higher prices, or the prevention of expensive governmental regulation add to this private benefit of private rule-setting.

For business purposes, it is reasonable to invest in and join private voluntary programs as long as the private benefits of the relevant program exceed its private costs. This issue is also dealt with in the context of club theory, which is developed and applied in the chapter by Hsueh and Prakash. Graph 1 shows this cost-benefit function for two companies A and B. The cost of investment in the program (C_a and C_b) increases with the stringency of a standard to an increasing degree. “Stringency” here means substantive performance. One can differentiate between designed climate standards according to whether they define (only) process standards or performance standards as well, for instance, and in terms of the ambition of the performance criteria. While first improvements in generally can be attained with relatively low investments, marginal costs of improvement increase with rising standard stringency. The position of the cost function depends on technological and organizational characteristics of the company and can vary, for example due to the existence of economies of scale or differences in the know how of companies. Also the private benefit of investments in private voluntary programs, for example in the form of a reduction in the risk of scandals, increases with such investments (B_A and B_B), to a decreasing degree however. While first investments can be expected to already deliver substantial improvements regarding the risk potential, further reductions in risk decrease with more investments.

graph 1 about here

The different cost- and benefit functions of companies follow from the fact that not all of them have the same opportunity of transforming governance investments into corresponding

economic gains, as we shall see later. Companies which are more vulnerable to civil society campaigns or new public regulation due to their company and brand image, sector characteristics, cultural origin, or proximity to consumers, or which are more sensitively hit by political consumption strategies, can, in principle, benefit more from private voluntary programs than companies for which the different factors do not apply. The resources of civil society organizations for monitoring business conduct are limited. Also, the boundaries of public receptiveness and reactivity regarding the revelation of “scandals” show that only the companies which so to speak stand in the first row of public perception feel public pressure in its whole extent. Especially the corporations, which are of pivotal interest in the present research inquiry, are in close contact to consumers and are therefore very vulnerable to consumer attitudes towards the company.^v

As emphasized in the introduction and in the other chapters of this book general and sector-specific knowledge and values play a role. Indeed, the presence or lack of legal and accounting expertise may exercise an influence on a company’s assessment of the costs and benefits of investments in a private voluntary program. Similarly, the benefit function’s position will be influenced by deliberate and unconscious decisions regarding the valuation of risks and opportunities as well. In this respect, the top management’s normative perspective and therefore connected social and intra-corporate learning processes also have an effect (Nash/Ehrenfeld 1997; Cutler, Haufler, and Porter 1999).

Next to company characteristics, the problem characteristics of climate change will have an influence on cost-benefit functions. Thus, the extent of a problem, filtered through available information and perceptions, as well as the likely impact of the private voluntary program on this problem will affect a company’s willingness to invest in the program. Likewise, public awareness of the existence of a problem and its relationship to the company’s activities,

which influences the likelihood of public or consumer pressure, is going to have an effect. Indeed, companies may gain more from investing in private voluntary programs targeting marginal issues or issues in a superficial way, if these issues or superficial measures have or can easily gain the attention of the public. Similarly, the management's norms and beliefs regarding the particular problem can play a role.

Finally, the formal involvement of civil society or public actors influences the utility functions of participating businesses as well. The involvement of civil society may lead to higher levels of governance investments, when designing, implementing and enforcing rules, for instance. This effect can be explained easily from the benefit point of view since civil society's participation usually implicates higher credibility and, therefore, higher private benefits. The same applies to participating public actors, admittedly to a somewhat lesser extent due to the - at least in some countries - growing concern about a potential capture of the state.^{vi}

On the cost side, technological and structural factors are likely to play a role in climate change policy. Thus, the cost function is likely to be placed lower for issues that can be solved with available and affordable technological changes or small organizational efforts, which are really critical issues in the field of climate change policy. For technologies that need to be developed first (in which case there is also a risk of development failure) or for fundamental changes affecting the core of a company's activities and existence, cost functions may be deterrently high. Similarly, companies' as well industry profiles differ with respect to their exposure to certain problems, of course. Thus, a company in an extremely energy intensive sector may face higher costs with respect to energy savings measures than a company in a sector with low energy intensity.

In sum, the following major factors can be expected to exercise an influence on an actor's utility function regarding investments in private voluntary programs: 1. Factors influencing its visibility and perceived pressure: the size of the company, country of origin, host country, brand/business and sector history and image, range of products, problem characteristics; 2. factors influencing an actor's normative position: values of the executive board, affiliation in business associations, problem characteristics; 3. additional factors influencing the opportunity for private profit: competitiveness of the environment, provision of legitimacy due to civil society and/or state involvement; 4. factors influencing the cost function specifically: extent and nature of necessary changes, availability and affordability of technological and organizational solutions, product and process characteristics with respect to problem in question

The perspective on cost-benefit functions of business actors demonstrates that a company will prefer a more stringent rule-setting, the higher the privatizable benefit of the rules and the lower the cost of required investments. In the above graph, company A has relatively higher opportunities to privatize the benefits of governance institutions and a relatively lower cost function than company B. Accordingly, investments in such a governance institution can be profitable for company A up to point s_A , while investments for company B are only lucrative up to point s_B . However from an economic point of view, the ideal point of investment would be attained earlier in each case, namely at the point of maximum net benefit which is shown in graph 2 for company A with s_{A^*} (and, of course, can be equally determined for company B).^{vii}

Graph 2 about here

The different cost-benefit functions point out that under private voluntary programs exceeding the participation of a single company a compromise frequently will be needed. In other words, for group standards (e.g. sectoral standards) rather than individual private voluntary programs, the process of negotiation among the different actors needs to be considered as well. The impetus for the development of such a group standard may be the experience with public or civil society pressures, the existence of similar normative predispositions of the management, or a need to solve common problems (besides pressure by other actors). Likewise, such a process may be initiated by an external agenda-setter, such as a business association, civil society organizations or effective and recognized bodies outside the industry in general, as discussed in the introduction. In addition, a company itself may actively recruit others to create a joint program. A precondition for the successful development of a group standard, however, would seem to be a minimum of common interests among the powerful actors in the group. In consequence, we can add a fourth point to the list of determinants of the output of private voluntary programs that we identified above, namely factors influencing the development of group standards: minimum of common interests and the distribution of power among actors in the group. We will later see how this factor affects group programs in the agrifood sector.

For our example, the stringency of the agreed standard, respectively the output of the private voluntary program between company A and B, would lie somewhere between S_{A^*} and S_{B^*} , including both end points ($S_{B^*} \leq S_{AB} \leq S_{A^*}$). In other words, there are three possibilities: an

agreement on the minimum standard ($S_{B^*} = S_{AB}$), a compromise on a standard between both ideal points ($S_{B^*} < S_{AB} < S_{A^*}$), or an agreement on the maximum standard ($S_{A^*} = S_{AB}$).

Simultaneously, these thoughts show possible strategies of external actors to influence the input into private voluntary programs. Thus, civil society organizations or a “shadow of hierarchy” created by public actors can increase the cost of failure for business actors, and, therefore, move the companies’ benefit functions to the upper right. In this context, a focus by civil society organizations or public actors on companies of type B suggests itself, since a movement of their benefit functions most clearly could improve the agreed standard.^{viii}

Output – Monitoring and Complying

The three above mentioned possibilities of input contain different implications for the implementation of the standard and, therefore, the output, respectively the effectiveness of private voluntary programs. In case of an agreement on minimum standard (S_{B^*}), the incentive arises for company A to invest beyond the standard. Such investments by A will be smaller, however, as a softer standard cannot be communicated with as much gain. When there is a compromise between the positions, incentives of non-compliance arise for company B, besides the incentives for A to exceed the standard. For the third model, the agreement on maximum standard, the incentive for company B not to comply with the standards is the largest. In this respect, the effectiveness of a rule should be thought of as a band of performance around the agreed standard S_{AB} , which allows for both leaders and laggards (graph 3).

The direction of this band will depend on a number of factors. If the actors agree on a minimum standard ($S_{B^*} = S_{AB}$), the band will be to the right of the agreed point of investment (graph 3a). When there is a compromise between both preferred positions ($S_{B^*} < S_{AB} < S_{A^*}$), it will be both above and underneath the agreed standard (graph 3b), and when a high standard is agreed on, the band will be on the left of the point of investment (graph 3c). The spread of the band below the standard will be influenced by the existence of monitoring, sanctioning, and reporting mechanisms, among others. These will influence the negotiations on the stringency of the standard already, as company B will refuse to accept a high standard that is coupled with strong opportunities for monitoring and sanctioning. Thus, the actual effectiveness of private voluntary programs can clearly exceed the agreed standard or clearly lie underneath.

Graph 3 about here

When can one expect which form and direction of a performance band? Generally, tight performance bands are only probable within small groups of relatively homogeneous actors, and the agrifood sector is a highly oligopolistic one. However, as soon as we talk about more encompassing rules including a large group of firms, a relatively extended stretch should be expected.

Also the factors influencing the direction of the band of performance can be identified. The agreed climate standard will depend on the power distribution among companies, control and penalty possibilities, as well as on costs associated with defection of individual companies.

Thereby, it is assumed that the case of standard agreement is rare at the upper end of the performance spectrum. A highly ambitious standard which enables laggards' defection only makes sense for leaders if neither the standard's reputation is damaged nor their own. Such damage could result, after all, in case failure of standard performance by laggards becomes public. A highly ambitious standard without the opportunity of defection, i.e. with efficient control and sanctioning mechanisms, however, will hardly be acceptable for mass-market companies, and, inasmuch, only be existent in case of a strong asymmetric power distribution in favor of companies with higher benefit functions.

Moreover, one can expect that a group standard will be located the closer to the left end of the performance band, the less relative influence companies with high benefit functions have in negotiations, and the more monitoring and sanctioning mechanisms are created. The latter will be needed more if the group is heterogeneous and big, i.e. the bigger the collective action problems within the group and the incentive to defect. In such situations, one is more likely to encounter rather low standards, respectively standards which secure the minimum performance and, simultaneously, give leeway to the better performance of businesses, and foster the expansion of the performance band towards the right through incentive structures and learning processes. Hence, one can derive a minimum of program effectiveness from the standard's stringency in such situations and, simultaneously, consider a further potential positive momentum from learning processes and incentives to out-perform the standard. One should not infer standard effectiveness only from the good performance of individual leader companies, however. In other words, the usefulness of individual case studies or even surveys of a select range of companies (such as the biggest ones) or companies in the "first row" is limited here.

Common rules and standards within the midfield of the performance band should be expected as a compromise solution which allows a certain range of actual conduct in both directions. However, leaders should have an interest in standards not being undercut too often and explicitly, and, thereby, losing their private benefit. Such standards can be found in situations in which informal control and penalty mechanisms exist due to group characteristics, and collective action problems remain manageable. The standard's stringency itself provides an indication of its average program effectiveness in such cases. However, due to their frequent focus on leaders or laggards, the value of case studies regarding individual companies or a select number of companies is limited here as well. Again, empirical studies thus would need to analyze the full range of relevant companies or an arbitrary sample.

In sum, the following factors can be expected to determine the extent to which a program actually changes business' conduct and pattern of complying, i.e. the output of a private voluntary program: 1. Factors influencing the collective action problems: size and heterogeneity of target group. 2. Power asymmetries among the actors involved, and 3. Factors influencing the likelihood of defection: monitoring and sanctioning opportunities, public reporting of compliance failures

The above theoretical discussion has identified a range of factors influencing the willingness of companies to design, join, and comply with private voluntary programs. In the following, we will attempt to explain the extent to which private retail food programs address the issue of climate change and their likely program effectiveness on the basis of these factors. Such an explanation has crucial implications for the handling climate change as well as private voluntary programs. Specifically, it will provide a basis for assessing whether private voluntary programs can provide alternative or relevant supplements to traditional public regulation. We have identified factors in the incentive structures of firms that may both

facilitate and impede collective action, and hence pave the way for individual action through retailers in the agrifood sector. In the following analysis, we will examine how this theoretical framework can be applied, attending to designing, joining, monitoring and complying.

Because programs are currently under development, emphasis is primarily on the input side of programs, and especially on the problem of designing. At the same time, however, we also address problems of recruiting new members, monitoring corporate behavior, and seeking compliance with rules. In the conclusion, we will finally summarize our findings on the potential role of private voluntary programs in dealing with climate change and the impact of the factors outlined in the theoretical framework on these programs

Retailers' Climate Change Governance in the Agrifood Sector

This section provides an overview, assessment and first set of explanations of private retail food programs that address climate change issues and their specifications. It first lays out the activities of the ten largest food retail corporations before describing the efforts by retailer groups and associations. In our approach, we use four categories based on the theoretical framework outlined above to measure the stringency (input) and the effectiveness (output) of private retail programs in tackling climate change: designing targets (A), partners and standards (B), transparency and reporting (C), and governance mechanisms for monitoring (D). The first two categories emphasize the input side of the process, while the latter relate more strongly to output.

We focus on the ten leading food retailers in the world (Walmart, Carrefour, Tesco, the Metro Group, Kroger, Auchan, Rewe, Aldi^{ix}, Lidl^x and Cosco) and the most relevant groups (British

Retail Consortium (BRC), the European Retail Round Table (ERRT), the Global Food Safety Initiative (GFSI), Global Good Agricultural Practice (GlobalGAP) and the International Food Standard (IFS)), because of their importance in current developments in the global agrifood system and global agrifood governance. These corporations and associations are the dominant actors in the food sector, responsible for the processes and fundamental changes which were described in Section 2. Thereby, we are able to avoid selecting our cases on the basis of the dependent variable and able to ensure a comprehensive picture of the relevant actors. In other words, we are also able to point out which of these retailers and groups neglect the issue of climate change.

Importantly, the role of food in the product portfolio varies for the retailers and groups analyzed. For Walmart, Carrefour, Kroger, and the Metro Group other products such as toys, electronics, clothing, or jewelry are at least as much a core focus of their business activities as food. Likewise the BRC and ERRT, as two of the groups, whose private voluntary programs we consider, do not focus on food retail specifically, in contrast for instance to the GFSI, GlobalGAP and the IFS as alternatives. We will reconsider this difference in portfolio, when reflecting on the activities by the various retailers and groups with respect to climate change.

Designing Targets (A)

This first category is closely associated with the inquiry into issues of designing in private voluntary programs, pursued by this volume. As decisions about design tend to have consequences for joining, our analysis also indirectly relates to that issue, of course.

“Designing Targets” examines the objectives and levels of stringency determined in the explicit design of private voluntary programs. It asks whether the programs address the

relevant questions, in our case climate change. It also explores to what extent specific targets have been set, for instance in terms of emissions reductions. In addition, the design of private voluntary programs can be assessed in terms of investments in related issues, such as renewable energy. Finally, the range of processes and actors addressed by private voluntary programs has important implications for the potential impact of these programs. Accordingly, this section asks to what extent the identified programs target the retailers' supply chains.

When looking at these four issues, we find a wide variety in program design. Walmart and Tesco explicitly address all four aspects in their programs. Walmart, for example, initiated a long-term program, in which it specifies its aim "to reach a day where all of our energy comes from a renewable source" (Walmart 2009: 6). The corporation created the "Sustainability 360" approach, in which it attempts to integrate its associates, suppliers, communities and customers in its climate policy (Walmart 2008a). Walmart's "sustainability goals" are: to source 100 % of energy from renewable sources, create zero waste, and sell products that sustain the world's resources and environment. To achieve these goals, the company has set several benchmarks to improve the energy efficiency of its stores and trucking fleet. While sounding quite ambitious, one also has to realize a major weakness of Walmart's efforts, however. The program fails to set a date, by which the goal "Sustainability 360" should be realized.

Tesco initiated a climate change program with three main parts: the company tries to reduce its own direct footprint; it works with its supply chains and partners to reduce emissions more broadly; and it wants to lead a revolution in green consumption (Tesco 2009). Specifically, Tesco started to set targets, which address the reduction of greenhouse emissions in its buildings and its goods. Here, it wants to halve emissions from existing buildings by 2020, to halve distribution emissions of each case of goods delivered by 2012, and to halve emissions

from new stores by 2020 (all against a baseline of 2006). To achieve its goals, the company invested £100 million in a Sustainability Technology Fund to support large-scale world-wide carbon reduction technologies in its stores, distribution centers and supply chains, in 2007.

Carrefour or Rewe perform relatively well in terms of the designing of targets as well, each addressing three of the four aspects. As part of the relevant measures, Rewe, for instance, has announced an aim to cut its greenhouse gas emission by 30% by 2015. Moreover, Rewe claims that it is covering nearly 100% of its energy demand in Germany with renewable energies (Rewe 2009). Carrefour made a commitment to reduce its energy consumption by 20 percent per square meter of sales area by 2020, in 2004. To achieve its target, the Carrefour Group initiated an Energy Management System (EMS) project - a theme also referred to by Clapp and Thistlethwaite in their chapter - to enable it to develop telemetry and remote control of equipment (The Carrefour Group 2009).

The programs of Kroger and the Metro Group take a middle position. They are concerned with climate policy issues, but the various programs are not as detailed as those of the four first-mentioned TNCs. The US American food retailer Kroger made a commitment for change in three areas,^{xi} in which it plans to reduce its environmental footprint: energy conservation, emissions reduction and waste reduction (Kroger 2009). Ambitiously, Kroger specifies a goal of reducing the overall energy consumption in stores by 30 percent by 2010, using 2000 as a base. Kroger states that “it has worked aggressively in all areas of [its] business to reduce energy consumption” (Kroger 2009: 8). It claims to already have reduced its overall energy consumption by more than 22% - or 1.6 billion kilowatt hours or 1 million metric tons of greenhouse gas emissions – since 2000 (Kroger 2009). However, Kroger fails to comprehensively address suppliers or the question of renewable energy sources. The Metro Group has been mentioning specific objectives in its reports, since 2007. It has committed to

decreasing its emissions in the period from 2006 to 2015 by 15% per square meter of sales area. To achieve its objectives, the Metro Group publicly promotes its goals to change its own as well as other actors' behavior (Metro Group 2008).

Efforts by Auchan and Aldi South show even less specificity, thereby raising questions regarding the seriousness of the companies' efforts. Auchan does not formulate precise goals, but commits itself to reducing its energy consumption, carbon emissions, and emissions from transport. In addition, it has announced plans to invest in new technologies, innovations and renewable energy to reduce its impact on the climate (Auchan 2009). Aldi South has committed itself to three types of climate activities: saving energy in CO₂ intensive production mechanisms (fossil fuels), winning energy from renewable sources, and protecting the climate (Aldi South 2009a;b;c). However, there is no commitment to explicitly defined goals. Moreover, it is quite noteworthy that Aldi South only addresses these issues on its German webpage.

Finally, Lidl, Aldi North, and Cosco rarely mention the issue of climate change. If we look at the design of the environmental program of the three companies, we see that these TNCs have no commitments to CO₂ reductions or related environmental issues.

The specificity, stringency and comprehensiveness of the targets designed into the private voluntary programs by retail food corporations vary widely, then. This is all the more noteworthy, as even the best programs still tend to have considerable weaknesses. The failure to set target dates, for instance, means that it will be difficult for stakeholders to hold the company to any promises. More importantly, most of the targets specified for emissions reductions, for instance, focus on the easy aspects of food retailing, such a store lighting, cooling, or the efficiency of the truck fleet. The more difficult aspects of the climate change

impact of the agrifood system, such as the overall distances of travel of products sourced and distributed in a global system, or rise in the average carbon footprint of food products resulting from the ongoing industrialization of production methods or an increasing share of meat products in diets, for instance, are rarely being addressed.

Partners and Standards (B)

The second category inquires into public or civil society partners involved in the design and implementation of food retailer's private voluntary programs as well as international or national standards facilitating the accessibility and comparability of the programs.^{xii} Both aspects are primarily a question of program design (and thereby joining), but also relate to output issues in the form of complying, as these external actors and standards potentially increase the likelihood of compliance. In terms of design, inclusion of partners and standards able to allow for benchmarking suggests a greater probability of stringency of programs.

Public-private partnerships and private-private partnerships (e.g. with NGOs) are part of Carrefour's, Tesco's and Walmart's policy. In 2002 and 2004, Carrefour conducted a carbon assessment of its stores in partnership with the ADEME (French Environment and Energy Management Agency). In addition, it joined the Supply Chain Leadership Collaboration in 2008 "to raise awareness [...] of the effect of CO₂ emissions and general climate change" (The Carrefour Group 2009). The public institution supports the company to calculate the ecological footprint of the products provided by the retailer. Like Carrefour, Tesco has different partners on different sectoral levels. To decrease the carbon footprint in the distribution sector for example, it works with the Institute of Grocery Distribution, a UK

charity, which informs and educates people who work in grocery stores, on how to implement best practices for reducing CO₂ emissions (Tesco 2009). Simultaneously, Tesco works together with the University of Manchester and Defra (Department for Environment, Food and Rural Affairs) to gain support to reduce the environmental impact of the company. Walmart and the Clinton Climate Initiative, in turn, announced a partnership on the US Mayors' Climate Protection Summit in 2007 (Walmart n.n). This partnership plans to support the introduction of environmentally friendly technologies, such as energy efficient building materials and systems, and to explore ways to use their purchasing resources to reduce prices on sustainable technologies (Walmart 2009a). In addition to this initiative, Walmart created a Food and Agriculture Network, a coalition of buyers, suppliers, civil society organizations and academics, to decrease the environmental impact of food miles, water use and degradation, packaging and improve energy efficiency (Walmart 2009a).

Some of the other retailers also work with public or civil society partners, but do so to a lesser extent or work with weaker partners. The Metro Group and Rewe specify that they cooperate with the German Oeko-Institut e.V. (Institute for Applied Ecology), an environmental think tank, in their efforts. In addition, the energy provider Energie-Handels-Gesellschaft supports Rewe in sourcing its electricity from renewable sources, according to Rewe (Rewe 2009). As this partner seems to exist only for this purpose, however, its dependency on Rewe means that the partnership cannot necessarily be expected to increase program stringency. Auchan is also a partner of ADEME. Moreover, it states that its commitments to climate issues are based on the ideas of the Grenelle de l'environnement, a debate held in France in 2007 between the government, professional associations, private actors, and civil society (Auchan 2009).

Lidl, Kroger, Aldi North and Aldi South do not provide any information about partnerships.

If we address the question of standards, we find a substantial difference among the different private voluntary programs among the food retailers. While some retailers mention a range of standards or benchmarks, others do not address any of them. Tesco, Carrefour, Cosco, and Rewe, for instance, use the Greenhouse Gas Protocol^{xiii} to measure their CO₂ emissions. As a supporting instrument, Tesco, Carrefour, the Metro Group and Rewe use the ISO Standards 14040 and 14044, also discussed in the chapter by Clapp and Thistlethwaite, to calculate their emissions. In addition, Tesco and Walmart have been cooperating with the Carbon Disclosure Project since 2007 and publish their carbon footprints through it. Since 2002, Carrefour and Walmart publish their sustainability reports in line with the Global Reporting Initiative (GRI), moreover (Walmart 2009; The Carrefour Group 2005). In contrast, Kroger, Lidl, and Aldi South do not employ any standards that would allow a comparative assessment of their programs.

To sum up, we can see that partner and standards serve to differentiate between the design of the corporations' voluntary programs with respect to climate change. Particularly noticeable is that the biggest retailers (Walmart, Carrefour, and Tesco) appear to be quite ambitious in joining standards and maintaining partnerships. Clearly, the internal weakness of many of the standards employed means that they cannot ensure the stringency or effectiveness of private voluntary programs by food retailers. Moreover, the partnerships vary in their extent and power relationship between the partners. Still, such partnerships and standards allow the characterization and assessment of the various programs on an additional dimension.

Transparency and Reporting (C)

The third category discusses various aspects of providing information and transparency to external stakeholders. It is thus related to designing and joining, but also directly to complying, as the potential for external assessment is likely to increase pressure for compliance. Thereby, this category also moves the aspect of program effectiveness (output) more into the center of attention. To assess transparency and reporting, we look at how much information the companies provide and how transparent the access to this information is. In addition, we explore whether the company publishes a (sustainability) report. Both aspects only provide a basic indication of program performance, of course, as information provided by sustainability reports, is notorious for its vagueness and promotional character. Nevertheless, such information needs to exist if external stakeholders are supposed to have any chance of gaining an impression of a program. Finally, we investigate whether the programs attempt to capture the environmental impact of products through a carbon label or similar instruments. Importantly, such instruments, specifically carbon labels, do not only provide information to consumers as external stakeholders. They also ensure specificity in the provision of information and allow for a demand for change, which renders them an important element in the stringency and ambition designed into a program. While treating carbon labels in the category of transparency and reporting (C), then, a clear link to the designing of targets (A) category should be noted.

With respect to transparency and reporting, we find that Tesco, Walmart and Carrefour provide a relatively broad range of information on their climate programs in the form of sustainability reports and other documents on their websites. Tesco and Carrefour have been publishing sustainability reports since 2002. Walmart started only in 2007, but it has been publishing an additional “Sustainability Progress Report,” in which it presents an overview of the status of achievements regarding the company’s environmental objectives, since 2008 (Walmart 2009). Rewe and Auchan only recently started publishing sustainability reports

(2009), while those of the Metro Group and Kroger have been existing longer, but contain relatively less information. In addition, Rewe and the Metro Group provide a climate brochure. In comparison to these retail food corporations, Lidl, Aldi South, Aldi North and Cosco provide only limited information on their activities with respect to climate change. Neither Aldi South, nor Aldi North, Lidl, and Cosco publish sustainability reports. The German food retailers Aldi South and Lidl provide some information on their German websites. No information is available on other country websites. Cosco provides relevant information only in its annual financial report.

If we look at the question of labeling, we see that Tesco, Carrefour, Rewe and Auchan are the only TNCs to discuss the labeling of products in the design of their programs. Tesco was the first food retailer to introduce carbon labeled products.^{xiv} By the end of February 2009, Tesco had labeled 100 products of its assortment. Importantly, these products do not include meat products. Auchan, too, introduced product carbon labeling to increase the environmental awareness of its customers. In 2008, Rewe started a pilot project to create and implement a carbon label for selected products. In the coming years, Rewe plans to increase the number of labeled products (Rewe 2009). In comparison to the corporations above, Carrefour argues that “by focusing only on greenhouse gas emissions, it obscures other environmental criteria, such as water, biodiversity and toxicity, which may be of paramount importance in the case of certain products” (The Carrefour Group 2008: 11). Rather pursuing the carbon label approach, therefore, Carrefour follows a Life-Cycle Assessment to measure the environmental impacts of a product at “each stage of its life-cycle, from raw-material production to waste disposal.” (The Carrefour Group 2008: 12).

Information and labeling are important to characterize not only the design – the input dimension – but, importantly, also the effectiveness – the output dimension of private

voluntary programs. Similarly to our results for partnerships and standards (B), we find that only a few retailers seriously engage in the provision of information to external stakeholders (C). Again, the biggest retailers are the ones who appear to be more ambitious in publishing and pursuing product labeling. Even those programs, however, still lack specificity and comprehensiveness in their climate change related reporting.

Monitoring (D)

Our last category addresses the issue of monitoring, i.e. inquires into the internal governance mechanisms of the selected private voluntary programs. Again, internal monitoring mechanisms are a question of design (and joining), and thus relate to the input dimension. More importantly, however, they relate to the output function as monitoring is a precondition for even the most basic potential for internal pressures to ensure compliance. In other words, to answer the question whether the programs are likely to be effective, it is also necessary to analyze if the design of the implemented standards and programs will be monitored and evaluated regularly. Therefore, we investigate whether information on evaluation, monitoring or control will be provided by the companies.

Walmart reports that it has initiated the so-called Walmart Sustainable Value Network to monitor the implementation of its objectives (Walmart 2008b). It is a cooperation between Walmart employees, civil society organizations, academics, politicians and suppliers, and has the mandate to monitor the targets in all business activities and report the performance to Walmart (Walmart 2008b). Carrefour and Tesco, in turn, have implemented “Key Performance Indicators” to evaluate their business activities. Carrefour authorizes KPMG to

control its activities, while Tesco monitors its activities by itself.^{xv} Rewe points out that the partners of the company (EHA and the Öko-Institut) control the achievements of its commitments. Interestingly, not only Lidl, Aldi North and South, and Cosco do not publish any information about monitoring, but the Metro Group and Auchan fail to do so as well. Kroger mentions monitoring, but here, too, the information stops at that and is thus insufficient (Kroger 2009).

In consequence, we find a similar level of variance in internal monitoring mechanisms for the programs investigated as we did for the other categories. The extent to which the world's biggest food retailers have build in monitoring mechanisms in their programs ranges from ambitious plans to a complete neglect of the issues, with the majority of companies falling somewhere in between. Importantly, even those with monitoring provisions do not specify remedies in the case of failure.

Group Programs

When we turn to the group programs and check them against our four categories, we find that most programs, specifically the IFS and GFSI, however, appear to neglect the issue of climate change completely. They neither publish information on any kind of climate policy nor address the issue in their standards and principles. The GlobalGAP mentions on its homepage that its “standard is primarily designed to reassure consumers about how food is produced on the farm by minimising detrimental environmental impacts of farming operations [and] reducing the use of chemical inputs” (GlobalGAP 2009), but it is a challenge to find further information relating to environmental standards, and especially with respect to greenhouse gases. Therefore, we concentrate on the BRC and the ERRT.

If we look at the design (A) we can say that the BRC and the ERRT seem to be relatively active in addressing the issue of climate change. The BRC has defined five overarching environmental goals, which are divided into several smaller targets and each includes climate related aspects. For example, the first goal is to reduce the direct environmental impact of its organized retailers. As part of this goal, the BRC aims to reduce the emissions from its members' buildings by 15 percent from 2005 levels by 2013, and energy-related transport CO₂ emissions from store deliveries by 15 percent in the same period. The other goals comprise questions of the integration of suppliers or the change of the behavior of customers. The ERRT initiated a pledge in 2008 to reduce its environmental impact by 20% by 2020.^{xvi} It prescribes a focus on energy efficiency where the ERRT, like the BRT, formulates five goals. First, members commit to reducing energy consumption per square meter of commercial premises by a minimum of 20% by 2020 compared to base year reference levels. Second, they want to work towards a more ambitious target than the European Commission's target of sourcing 20% renewable energy by 2020. Third, they identify and share examples of best practice in delivering energy efficient solutions in the retail supply chain. Fourth, they attempt to investigate further ways of providing energy efficiency information for products they sell. Lastly, they want to share knowledge about the most effective ways of communicating information on energy consumption and energy saving behavior to consumers.

In terms of partners and standards (B), the BRC reports that it aims to engage partnerships to reduce the environmental impact of its members. The ERRT does not provide any information in this category.

Efforts to foster transparency and reporting (C) about the programs of the two associations can be identified, however. Relevant information can be downloaded from their respective

websites, on which both of them provide press releases and brochures about their environmental commitments. To monitor (D) the goals, the ERRT states that “the companies will report on progress through their annual reporting processes – for example, in their CSR reports, or specific energy efficiency reporting procedures, as appropriate” (ERRT 2008). In other words, EERT reporting does not go beyond the reporting by the individual companies. The BRT asks its members to report their performance on their environmental goals relative to the 2005 baselines, as well as their plans for future action.

In terms of group programs, then, we can identify a couple of private voluntary programs addressing the issue of climate change by (food) retailers. These programs are in a very early stage, however, and lack ambition in terms of the inclusion of stakeholders and standards of comparability. The majority of associations and groups, however, are not active in this field.

Critical Reflection and Assessment

Having described the programs of the various retailers and groups, a critical reflection and explanatory assessment of the given climate change related activities and their likely effectiveness is necessary. Different aspects of input – in the form of designing and joining – and output – in the form of monitoring and complying – are covered. The comparative assessment shows that some food retailers, e.g. Walmart, Tesco and Carrefour, are relatively active in the climate change area, and their programs reflect some effort to reduce their carbon footprint. These actors have defined specific targets, work with civil society organizations, think-tanks or public actors in this context, and make their performance on the reduction of their carbon footprint relatively public and transparent. In addition, the BRC and the ERRT as

associations have comparatively clear climate targets and provide information about their commitments to climate change. In contrast, the activities and the information published by German or US food retailers, e.g. Lidl, Aldi and Cosco, or the GlobalGAP, are comparatively weak. Unsurprisingly, there is also a manifest lack of transparency. These activities engender little confidence in a reduction of the company's or group's carbon footprint. Finally, there are retailers and groups that do not have a program on climate change aspects at all, e.g. Aldi North, the GFSI and the IFS.

In general, the question of the accessibility of climate policy information from the respective retail corporations needs to be critically evaluated. With the exception of Lidl, Aldi and Cosco, every retail chain considered here publishes an annual sustainability report.^{xvii} Noticeably, Carrefour^{xviii}, Tesco, Walmart and the Metro Group are the only retailers, which provide the previous sustainability reports on their homepage, thereby making available a means to compare the reports and assess progress. Auchan and Kroger only supply the most current version online. This makes it difficult to assess developments in the environmental performance of the company as well as its degree of goal achievement with respect to sustainability. If only the food corporations themselves compare their performance of the last year with previous years' reports, one relies on the information provided. In other words, there is a lack of information accessibility and transparency.

To avoid these problems, Walmart has been publishing a progress report since 2008, in which it compares its green house gas emissions from year to year. Interestingly, the emissions of Walmart and Tesco increased in the last year and both of the retailers publish this development in their reports. This seems to be a positive sign for the transparency of information, albeit a negative one for their carbon footprint and the achievement of their goal to reduce CO₂. In contrast, the only information which can be found about the (weak) climate

policy of Lidl, Aldi and Cosco is on their homepage – and in all cases, it is difficult to define a date, or when commitments were made, as the retailers do not mention precisely when they started to commit to the environment.

In terms of targets, Tesco, Carrefour, and the Metro Group have defined similar quantitative targets for reductions in GHG emissions. Walmart’s “Sustainability 360” approach seems very ambitious, but given its increasing CO₂-emissions, they have yet to prove their ability to achieve this goal. Kroger has announced that it has already reduced its energy consumption by about 22% and that they will achieve a 30% percent reduction by 2010. In comparison to the other retailers, a large part of this reduction appears to have been achieved early and quickly. Here, further inquiries are needed to investigate the conditions, which have allowed Kroger to make such a progress in carbon emissions. The targets defined by Auchan, Aldi South, Rewe, and Lidl are much less specific or apply to very specific sections of their carbon footprint, such as their electricity supply. As collective entities, the BRC and ERRT have defined quantitative targets as well. These targets apply to all members of the group jointly, so that they allow for over- and underperformers. In other words, the responsibility and accountability of the individual company for the given target is limited.

Most of the programs appearing to represent somewhat serious attempts to reduce greenhouse gas emissions on the part of a company or group are associated with investments in technologies and technological development, management and logistics as well as personnel. Tesco, in particular, has explicitly invested a large sum in a sustainable technologies fund. In general, however, little detail on the financial implications and requirements of the programs can be found.

Many retailers cooperate with key actors in their institutional environment from civil society or the public realm in their efforts, thus adding legitimacy to their activities. This is not the case, of course, to the extent that such partners have the respective company as their sole customer, i.e. are entirely dependent on that company. Such a case exists with respect to the actor helping Rewe stores to source 100 percent of their electricity supply from renewable sources. In addition, the cooperation with soft and broad initiatives like the Global Compact or the application of ISO 14000 standards promise little gain and therefore cannot be counted as contributing to the legitimacy and acclaim of a company's efforts. Finally, the cooperation with government can be evaluated quite critically, from a different perspective. Thus, the BRC's plans to inform the government on its climate related activities, to work with national and international policy makers towards the establishment of a low carbon economy, and its support for global emission targets could in the worst case just reflect intensive lobbying activities, and possibly aim at lowering targets or prolonging time frames envisioned by governments. Without further evidence on the actual content of the BRC's communication with and support of governments such activities should not be seen as sources of legitimacy either.

As discussed in the chapter by Hsueh and Prakash, information giving is crucial and, in our case, the investment of a number of retailers in carbon product labeling efforts is an interesting one for two reasons. First, such a measure would appear to allow a comprehensive and transparent approach to targeting greenhouse gas emissions associated with its products from farm to shelf. Such a measure transfers responsibility to the consumer, of course, which has both positive and negative sides. Second, the pattern in which the retailers considered here adopt this approach or invest in its development appears a bit erratic. Tesco is quite advanced in this regard and has been publicly promoting them for a while now. Auchan, which generally does not appear to have a very ambitious climate related program, is active in the

area of carbon product labeling as well. Rewe has joined a partnership on the development of carbon product labeling with other food companies and think tanks. It is only involved with one product (strawberries) here, however, so that it still has to prove a real interest in such an approach. Interestingly, Carrefour has adopted a different approach. Instead of the carbon label, it uses the life-cycle approach so that a critical reflection of the two types of labeling is needed (The Carrefour Group 2008). Through the life-cycle assessment, Carrefour attempts to evaluate the environmental impacts of its products during the process of production, use and disposal. This label includes, for example raw materials, such as oil or, in part, the emitted GHG. The carbon-labeling, however, which Tesco and Auchan have implemented, indicates how much CO₂ is emitted from production to disposal. Tesco uses the standards of the Carbon Trust. The carbon-labeling is also a life cycle analysis, of course, but it does not measure the total environmental impact of aspects other than the GHG emissions (Schmidt 2009). On the one hand, then, the carbon labeling can be criticized in that it just evaluates the GHG emissions instead of all of the overall resource use associated with the production cycle of a product. On the other hand, however, it can be argued that GHG emissions are the main cause of climate change, which may be the most pressing problem we are facing, and that therefore it makes sense to create a label that prioritizes them.

However, in both cases the question whether the two types of assessment can reduce the emissions of GHG still needs to be answered. The impact of the two labels has been widely criticized and declared to be inadequate (Schmidt 2009). In particular, the reduction of environmental impact through the life cycle analysis or the carbon label needs an adequately trained and informed consumer, as well as the provision of alternative consumption choices. Moreover, the calculations always are based on certain assumptions. The assessment of a carbon label for a can, for instance, is only applicable if consumers recycle the can. The two labels often calculate the greenhouse gas balance of recycled products. In addition, the

calculation ends at the shelf, meaning that the distance, which consumers drive to get a product, is not included in the label. Therefore, we can see that the labeling is still in the process of becoming an instrument to reduce the GHG emissions associated with food production and consumption, only.

On the basis of this comparison, then, there appear to be four rough categories of private programs of retailers and groups with respect to climate change issues. In the first group, retailers such as Walmart, Tesco and Carrefour would find their place. They have ambitious goals, try many ways to reduce their environmental impact, and give good access to their information and their climate policy achievements. The members of the second group also make information available, but not as detailed as the ones in the first group. Their activities and their commitments are weaker in comparison to the other retailers. Members of this group would include: Rewe, the Metro Group, Kroger, Auchan and the BRC (because of the lack of information and progress). The members of the third group do not make any clear commitments to climate change activities and do not regularly publish reports or make other detailed information about their climate activities available. Aldi South, Lidl (The Schwarz Group), Cosco and the ERRT would fall into this group. Finally, the members of the last and fourth group are the ones that neglect the issue of climate change altogether: Aldi North, the GlobalGAP, IFS, and GFSI.

How do coverage and expected effectiveness of private retail food programs with respect to climate change match with the determinants of investments in private voluntary programs discussed in the theoretical framework laid out earlier in this chapter? In the following, we present some arguments on the impact of the determinants in this particular case. The discussion is far from comprehensive and very explicitly does not aim to provide a stringent testing of hypotheses. For such an endeavor, the empirical data are not sufficiently reliable

yet. Rather, we only point out preliminary ideas on the importance of some factors versus others because the programs reviewed are in many cases only in an infancy stage.

The factor visibility does appear to play a role, but not a determinative one. All of the retailers considered are large. Yet, some of them do not even address their climate change impact in their private voluntary programs. Still, the larger retailers on average are the more active ones. Their programs address the issue of climate change, even though the question of effectiveness cannot be answered with confidence even for a large share of their activities. Additional explanations of the variance in the group derive from individual characteristics of the companies, which also influence their visibility. Walmart, for example has been plagued by scandals and is in need of improving its image.

The characteristics of the home countries also appear to play a role. Tesco has its home base in the UK, i.e. a country in which a lot of awareness and pressure on retailers with respect to their environmental and social performance exists. Likewise, the French chains Carrefour and Auchan are likely to be affected by the dialogue between retailers and the government, mentioned above. In stark contrast, the German retailers appear to experience the least pressure. In fact, the public perception of food discounters in Germany focuses almost entirely on questions of price and induces hardly any discussion on their environmental performance.^{xix} Even Lidl, which has experienced a number of labor scandals, apparently does not feel the need to really invest in private voluntary programs and redefine itself accordingly. Similarly, the characteristics of the host country appear to have an effect, as the German discounters, for instance, promote the little environmental efforts that they make only on their German homepages but not on the Austrian or Eastern European ones.

Finally, the involvement of public or civil society actors appears to aid the coverage and effectiveness of private voluntary programs with respect to climate change, even though the impact varies with the nature of the “partner”. Neither partners depending solely on the partnering company for their existence (e.g. the case of Rewe’s partnership with the Energie-Handels-Gesellschaft GmbH & Co. KG – a German energy provider), nor large networks with a lack of individual leadership and focus such as the Global Compact appear to be providers of a significant impetus. However, it is remarkable that the corporations cooperating with a public partner, specifically Carrefour, Walmart and Tesco, are comparably strong in their commitments. Here further research will be needed to investigate the influence of public institutions on the voluntary programs and standards of TNCs.

Additional and in the context of our topic particularly interesting influences appear to be provided by the characteristics of the problem ”climate change”. Thus, it is noteworthy that the actors and groups, which address climate change issues in their private voluntary programs the most, are those who have also other products in their assortment than food. In other words, they may be experiencing public pressure because the public sees a link between these other products and energy consumption issues. The link between food production and consumption and climate change, in contrast, does not yet appear to be well established in the public debate.

This aspect is connected to the question of the costs involved in addressing a given problem. Not surprisingly, the majority of efforts delineated in the description of the private voluntary programs above focuses on questions such as energy use in buildings, transport and travel. In the context of agrifood, these issues would appear to be the “easy” ones. Improvements in lighting or the efficiency of the truck fleet can easily be made with existing and affordable technologies. Even more extreme, the supply of customers with products needed to deal with

changed weather conditions or providing information on one's private voluntary programs to the political realm offer opportunities for business profit and image campaigns rather than representing costs. In contrast, reducing overall transport needs is a tougher task in an agrifood system that is based on global sourcing and distribution chains. Reducing the climate contribution of food as such, for instance by reducing the share of meat sold/consumed, an even tougher one, in particular as such an effort will not be popular with consumers either. In this context, it is noteworthy that the cooperation between Tesco and the Carbon Trust in the development of product carbon footprinting does not include meat products.

What can we say about the determinants of the group standards and their effectiveness? The ERRT and the BRC are groups of a medium size with a clear retail focus of their participants, thus providing for some degree homogeneity of interests, although clearly not perfect homogeneity. The interests of member firms, such as IKEA and Kingfisher, are quite likely to diverge on a number of issues. In comparison, the GlobalGAP, IFS, and GFSI would seem narrower in their common focus, given that these are explicitly food related programs. One may argue that these initiatives involve actors other than retailers, of course, thus broadening the diversity of interests again. Yet, critical analyses of the initiatives have shown them to be strongly dominated by retail interests, especially in the stage of their creation.

Given the existing, although limited heterogeneity of participating members in the BRC and ERRT, our theoretical considerations would lead us to expect a standard in the mid-range allowing over and under performances. This situation is indeed reflected in the lack of sanctioning and enforcement provisions of the two private voluntary programs and their provisions with respect to climate change, as well as the definition of rather broad objectives for the groups as such, rather than specific ones for the individual members.

Again, it is noteworthy that the private voluntary group programs focusing explicitly on food are those, who are the least active with respect to climate change. This appears to be another indication that the link between food production and consumption and climate change is not well established in the public debate and consumer awareness yet. It remains to be seen, whether this situation will change with the increasing focus on the agrifood contribution to greenhouse gas emissions, which we are currently witnessing. In other words, our expectation that a higher degree of homogeneity of the group and therefore less collective action problems would induce a private voluntary program, in which the standards are more narrowly defined, has to be expanded to include the interests of the given group members. If the dominant preference of the group members is not to invest in a respective program, than the greater homogeneity of the group will only make a weaker output more likely.

Conclusion

This chapter has shown that the climate change related commitments and activities by major retailers or relevant groups and their private voluntary programs are diverse. They range from ambitious quantitative targets to a complete neglect of climate change issues. Importantly, only a few programs mention compliance and monitoring processes in terms of their own rules. Because of the lacking control mechanisms, then, even the schemes promising to be ambitious are not able to engender sufficient trust that a ‘real’ change towards a reduction in greenhouse gases will materialize.

How do these findings relate to the program performance, which the theoretical framework laid out in this chapter would have us expect? Visibility appears to be a factor, as the biggest

retailers are also particularly active. It is clearly not a determinative one, however, as those retailers not engaging in private voluntary programs related to climate change are far from small. The home country effect appears to be quite powerful, as does the influence of (serious) partners. Overall, then, a range of factors appear to induce retail corporations to invest in private voluntary programs relating to climate change. However, they do so to varying degrees and, for the majority of retail corporations, to a limited extent only.

Particularly relevant, moreover, appear to be the problem characteristics and their influence on the costs of potential remedies. In the case of climate change, these problem characteristics mean that measures targeting the major sources of greenhouse gas emissions in the agrifood sector are extremely costly.

From the perspective of the framework, then, we are facing a situation in which relatively steep cost curves are combined with benefit curves, which for many retailers appear to be set at relatively low levels. The conclusions which we can draw from this analysis, then, are two-fold. We can identify a potential contribution of private voluntary programs in the retail sector to the pursuit of climate change objectives, in general. We also have to acknowledge, however, that this contribution is very limited right now and unlikely to expand dramatically in the future, unless conditions change substantially.

To be more specific, private voluntary programs can contribute in certain ways and to a certain extent to climate change governance in the agrifood system. With sufficiently specified targets, a sufficient degree of transparency and monitoring as well as the specification of sanctioning mechanisms, private voluntary programs can probably contribute to increasing the energy efficiency of buildings, storage, and transport, for example. In other words, such programs can foster the diffusion of available and affordable technologies, as well as corresponding organizational and logistical measures. In order to foster the adequate

design of private voluntary programs across the board, however, an appropriate public framework would probably be needed.

Moreover, the link between food production and consumption and climate change needs to be better established in the public debate. In consequence, the investigation and highlighting of this link should probably be a prime target for political and scholarly intervention in order to foster climate change governance in the agrifood system. With increasing public awareness of the large impact of food production and consumption, consumers and citizens would be able to exert more pressure on food retail corporations to pursue serious efforts in this respect.

Similarly, public actors may consider establishing a firmer link between food policy, consumer policy and climate policy. Currently, these policy types frequently are handled in different ministries or by different public agencies. A better integration would not only allow for a more systematic targeting of the GHG emissions associated with food production and consumption by public governance, which in itself is an urgent necessity. It would also raise awareness on this link by consumers as well as business actors connected to the food chain.

Yet, private voluntary programs should not be expected to address and solve such fundamental problems as the rise in GHG emissions caused by the increasing role meat plays in the diets of Western consumers as well as wealthy consumers in developing countries, for instance. Even the extent to which private voluntary programs will be able to really reduce food miles in a global agrifood system based on global sourcing and distribution structures is questionable. For necessary fundamental structural changes, public actors will have to take the responsibility themselves. This is particularly the case, as consumers face enormous information and collective action problems, of course, when attempting to change the carbon footprint of the global agrifood system from the consumption side.

If the necessary structural changes in the global agrifood system are in fundamental opposition to the interests of today's powerful retail corporations, one may argue that looking at their private voluntary programs to assess such activities in the food sector is the wrong place to look, of course. Maybe we should look at the activities by other actors in the production and value chain instead. Indeed, individual food processors such as Nestle and Kraft have made commitments towards climate change. Similarly, individual pig farms in Germany are experimenting with combining pig raising with biogas production. The power of retail corporations and the private voluntary programs installed by them are one of the few available systems for a systematic implementation of climate change activities in the global food system so far, however.

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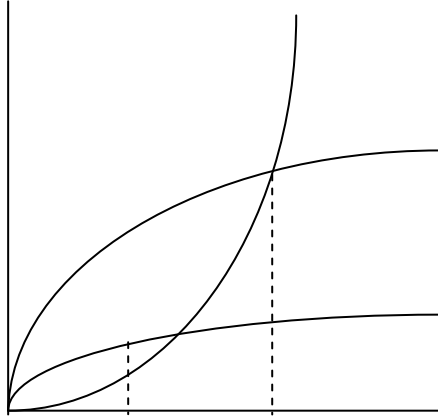
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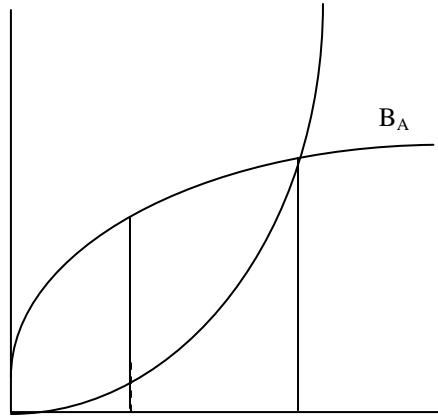
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Graph 1



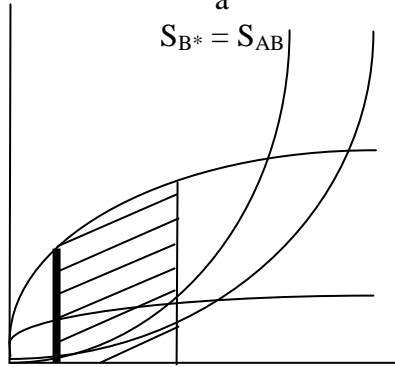
Graph 2



Graph 3

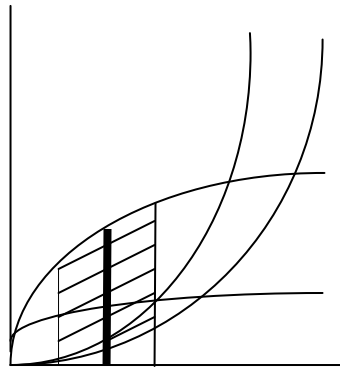
a

$$S_{B^*} = S_{AB}$$



b

$$S_{B^*} < S_{AB} < S_{A^*}$$



c

$$S_{A^*} = S_{AB}$$

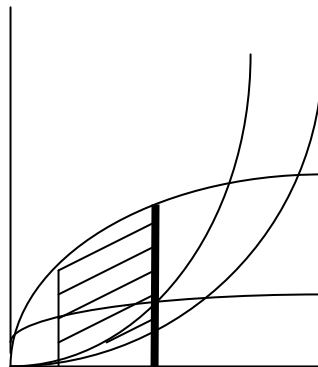


Table 1: The Market Power of TNCs in the Agricultural Sector	
Product	Share in global exports markets by 3-6 of the largest TNCs in agricultural sector
wheat	80-90%
corn	85-90%
sugar	60%
coffee	85-90%
rice	70%
cocoa	85%
tea	80%
bananas	70-75%
wood	90%
cotton	85-90%
pelts, furs and skins	25%
tobacco	85-90%
caoutchouc	70-75%
jute and jute products	85-90%
Source: Enquete-Commission Globalization of the World Economy, Deutscher Bundestag, 2002.	

	Designing Targets (A)				Partners and Standards (B)	
	Issue of climate change	Targets	Renewable Energy	Supplier	Partnerships	Standards
Walmart	++	++	+	++	++	++
Tesco	+	+	++	+	++	++
Carrefour	++	++	-	+	++	+
Metro	+	+	+	-	+	-/+
Kroger	+	++	-	-/+	-	-
Rewe	+	+	++	-	+	+
Auchan	+	-	+	-	+	-/+
Aldi South	+	-	+	-	-	-
Lidl	-/+	-	-/+	-	-/+	-
Cosco	+/-	-	-	-	-	-/+
Aldi North	-	-	-	-	-	-

	Transparency and Reporting (C)			Monitoring (D)
	Information	Reports	Label	Monitoring
Walmart	++	++	-	++
Tesco	++	+	++	+
Carrefour	++	+	+	+
Metro	-/+	+	-	-
Kroger	-/+	+	-	-/+
Rewe	++	+	-/+	-/+

Auchan	+	+	+	-
Aldi South	-/+	-	-	-
Lidl	-/+	-	-	-
Cosco	-	-	-	-
Aldi North	-	-	-	-

Explanation of the signs: - = the criterion has not been met, - / + =the criterion has been partly met, + = the criterion has been met, + + = the criterion has been more than met



Notes

ⁱ These numbers include the so called CO₂ equivalents. These equivalents describe the consequences of other gases, which are by far more dangerous for the atmosphere than CO₂ like Methan or Nitric oxide, for the climate change. They are calculated in relation to CO₂. Without the calculation of the CO₂ equivalents the climate change impact of the agrifood sector would be less than 20% (Greenpeace 2008).

ⁱⁱ Private voluntary programs falling into the interaction between the agrifood system and climate change in the broadest sense, are self-regulatory schemes in the field of bio-fuel production. However, these programs represent a special case and do not reflect the broader dynamics of this interaction. Accordingly, they will not be considered here.

ⁱⁱⁱ Depending on the exact interpretation, the term “voluntary” may be misleading, at least in some cases (see below).

^{iv} As the costs of implementation and documentation (including auditing and certification) tend to be extremely high from the perspective of small farmers in developing countries, private retail food standards have received a lot of criticism for pushing these farmers out of the market and into subsistence farming.

^v The list of factors also shows that socio-institutional path dependencies will exert an influence.

^{vi} With increasing concerns about the capture of civil society actors, their legitimacy claims may also be challenged, of course.

^{vii} Such calculations must be seen in a mid- to long-term perspective, of course, because some investments are only likely to pay off after a while. This will most certainly be the case for the actual achievement of climate change objectives. Benefits drawn from a better image of a retail corporation or the retail sector as such may well accrue in the short run, already.

^{viii} Technical support for company B by company A is possible in this context as well.

^{ix} Aldi is split into Aldi North and Aldi South, which have split territories between them both in Germany and internationally. Aldi North operates in Belgium, Denmark, in the North of Germany, in France, Luxemburg, Portugal, Poland and Spain. In contrast, Aldi South is operating in Australia, Austria, in the South of Germany, in Greece, Hungary, Ireland, Slovenia, Switzerland, the United Kingdom, and in the US.

^x In this chapter, we consider the commitments of Lidl, as the biggest food retailer of the Schwarz Group.

^{xi} Although, Kroger operates in the USA only and is not a transnational supermarket chain, we mention it here because of its economic power and number of existing stores. It is assumed that the environmental impact of Kroger is comparable with the other retail food corporations.

^{xii} The authors are aware that some of these international standards cannot ensure program stringency, as they entail weak control or sanctioning mechanisms, as discussed in the other chapters of this book. However, this criterion was chosen as such standards allow a first step towards a comparison and benchmarking of programs.

^{xiii} The Greenhouse Gas Protocol was established by the World Resource Institute and the World Business Council for Sustainable Development and aims to install the development and promotion of internationally accepted accounting and reporting systems for greenhouse gases (<http://www.ghgprotocol.org/>).

^{xiv} Through the carbon labeling it is possible to evaluate how much CO₂ and its equivalents is emitted during the production, transportation, use and waste process of selected products (Tesco 2009). Consumers are informed about the GHG which were produced when they buy carbon labeled products, so that they can play an active role in decreasing emissions (Tesco 2009).

^{xv} It could be criticized that Tesco monitors its activities in this meaning. The fact that Tesco indicates that it has emitted more CO₂ in 2009 than in 2008 is a hint that the monitoring process is independent.

^{xvi} The relevant members, who participated in this commitment, are: Asda (Walmart in the UK), the Carrefour Group, the Metro Group and Tesco.

^{xvii} The Metro Group published a climate brochure, which, however, provides much less information than the other reports.

^{xviii} It is also possible to order all the reports (except for the most recent one).

^{xix} A frequently voiced view is that the discounters provide cheap, quality products. Quality, however, does not refer to environmental or social characteristics in this context.