Elektronisch unterstützte Einbindung von BürgerInnen in den Klimaschutz

Potenziale und Effekte im Drei-Länder-Vergleich

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Abstract: Dass private Haushalte bzw. die einzelnen Bürger und Bürgerinnen einen Beitrag zum Klimaschutz leisten können, steht außer Frage. Über geeignete Ansatzpunkte zur Reduzierung des CO_2-Fußabdrucks gibt es hingegen geteilte Ansichten. Der Konzentration auf individuelle Einstellungs- und Verhaltensänderungen wird die Vorrangigkeit institutioneller und systemischer Veränderungen entgegengehalten. Der vorliegende Beitrag untersucht, inwiefern auf lokaler Ebene eingesetzte Partizipationsmodelle, die Elemente beider Perspektiven beinhalten, mit Unterstützung durch elektronische Medien Veränderungen im Sinne festgeschriebener Klimaziele bewirken können.

Die Basis dafür bildet das Forschungsprojekt e2democracy (Environmental Electronic Democracy), das im Rahmen eines Programms der European Science Foundation in Österreich vom Wissenschaftsfonds (FWF: I169-G16) gefördert wurde. Sieben gleichartig gestaltete lokale Partizipationsprozesse in drei Ländern (Deutschland, Österreich und Spanien) ermöglichen die empirisch vergleichende Erforschung ihrer Effekte. In jeder dieser Klimaschutzinitiativen kooperierten Gruppen von BürgerInnen mit der lokalen Verwaltung mit dem Ziel, die CO_2-Emissionen nachweislich zu reduzieren, indem sie mittels eines CO_2-Rechners über bis zu zwei Jahre ihre individuellen Klimabilanzen verfolgten und durch begleitende Informationsangebote sowie diverse Gelegenheiten zum Meinungsaustausch unterstützt wurden (wahlweise in Form von e-Partizipation oder mit traditionellen Medien). Der Beitrag skizziert theoretische Annahmen und eingesetzte Methoden, fasst die empirischen Ergebnisse mit Fokus auf messbare Effekte zusammen und zieht einige Schlussfolgerungen. Im Vordergrund stehen folgende Fragen: Welche Auswirkungen auf klimabezogene Einstellungen, klimarelevantes Verhalten und auf das Volumen an CO_2-Emissionen sind feststellbar? Welche Kontextfaktoren sind für Unterschiede im regionalen sowie im länderübergreifenden Vergleich relevant?

Grundsätzlich lassen sich individualistische von eher systemischen Zugängen zur Förderung klimagerechter Konsum- und Lebensstile unterscheiden. Erstere setzen primär auf die Einstellungs- und Verhaltesänderung durch geeignete Information, die Aktivierung von Normen nachhaltigen Konsums und wirtschaftliche Anreize. Zu diesen am Modell rationaler Wahl und Normaktivierung orientierten Ansätzen zählt etwa die von Thaler und Sunstein (2008) propagierte Hypothese, durch eine bestimmte Gestaltung von Informationsangeboten lasse sich ein „sanfter Druck" zugunsten von Entscheidungen in Richtung klimafreundlichen Verhaltens erzeugen (z.B. mittels Verbrauchsfeedback im Vergleich zu Haushalten in der Nachbarschaft, gekoppelt mit bildlichen Symbolen für positive bzw. negative Bilanzen, Elemente v Wettbewerb und soziale Anerkennung ins Spiel kommen). Die sich davon absetzende Gruppe systemisch orientierter Ansätze führt dagegen die Grenzen ins Treffen, die einem Projekt individueller Verhaltensänderungen in Richtung klimagerechter Lebensstile gesetzt sind, nämlich in Gestalt systemischer Abhängigkeiten und sozialer Praktiken (z.B. Shove et al. 2012); andere wiederum betonen die Bedeutung gemeinsamen Handelns und sozialen Lernens als Katalysatoren.

Die Thaler-Sunstein-Hypothese wird nur teilweise bestätigt. Wesentliches Ergebnis ist, dass zwar in den meisten der sieben BürgerInnen-Panels positive Auswirkungen in Form gesteigerter Sensibilität für Klimafolgen des eigenen Handelns, berichteter Verhaltensänderungen in verschiedenen Lebensbereichen sowie mehrheitlich verbesserter Klimabilanzen auf individueller Ebene, jedoch nicht notwendigerweise auch der kollektiven Emissionsbilanzen feststellbar sind. Wichtiger Faktor für die Erklärung deutlicher regionaler Unterschiede sind der Ressourceneinsatz sowie das Ausmaß und die Kontinuität der Betreuung der Partizipationsprozesse seitens der lokalen Verwaltungen. Der angebotene Medien-Mix bzw. die Wahlmöglichkeit der Partizipationsweise (e-Partizipation oder traditionell) erwies sich als zentrale Voraussetzung für die Entscheidung zur Beteiligung an den lokalen Initiativen. Zu den größten Herausforderungen zählen die Verbreiterung und Vertiefung der Beteiligung, die Validierung materieller Effekte und das Überwinden struktureller Barrieren für klimagerechtes Verhalten wie soziale Praktiken und (lokale/regionale) Arbeits-, Wohn-, und Verkehrsstrukturen.

1. Climate change policies and citizen participation

Facing the challenge of climate change, governments at all levels – from supra-national to local tiers – have stated specific targets to reduce greenhouse gas emissions and employ a variety of policies. A major focus is on infrastructural investments and supply side measures (e.g. the switch to renewable and cleaner energy sources, increasing energy efficiency, using waste heat for long-distance heating, extension of public transport). Awareness raising campaigns have become an integral part as it has become clear that achieving ambitious climate targets is not possible without sufficient cooperation from consumers and changes in everyday practices in both business and individual lifestyles. Governments also employ various demand side approaches and instruments for promoting climate-friendly behaviour in private and corporate consumption (e.g. energy demand side management by financial incentives, energy performance contracting and advice, information and education campaigns, metering and feedback). This group also includes social marketing interventions, based on scoping consumer types and context conditions, followed by tailoring appropriate change strategies to different segments of the population in order to increase the chances of a successful shift to climate-friendly behaviours. It shows that the topic of "sustainable consumption" and its promotion have entered the policy arena as issues of high importance (c.f. Jackson 2005), stimulating a variety of approaches to support shifts towards pro-environmental behaviours. New concepts such as "sustainable citizenship" involving "an understanding of citizenship as a total practice of responsibility between individuals and their political, social, economic, and natural environment" (Micheletti & Stolle 2012) reinforce the transformation aimed at. On the other hand critical voices warn against the tendency towards a "privatisation" of the responsibility for sustainability (Grunwald 2010).

A more recent development (despite the early coining of the concept "environmental democracy", e.g. Hazen 1997) is that governments are seeking a dialogue with citizens and companies and are beginning to discover citizen participation, supported by new media, as a specific strategy for mitigating climate change and raising the performance levels in achieving climate targets. The rationale behind such participation processes is to turn individual commitments into effective climate protection by building on a number of key elements (collective social action, community experience, social learning and capacity building) for enhancing problem awareness, identification with public objectives, and information on behaviour impacts (e.g. individual carbon footprint), together with providing support in changing to climate-protective behaviour, and exploiting advantages of electronic media for facilitating participation and the pursuit of these targets. Along with pure dialogue processes, collaboration and co-production programmes are becoming popular (Bovaird et al. 2009).

There have been high expectations regarding the impact of participation processes in traditional as well as new, electronic ways from the very beginning. Citizen participation is expected to provide new ideas and local knowledge to solve specific problems and lead to better policies as well as rebuild trust in political institutions and revive democracy. The advent of the Internet has brought an increasing number of new possibilities of participation employing electronic media commonly summarised under the label of "e-participation". Their special advantages lend themselves to use for several functions that might play an important role in enhancing the chances to achieve local climate targets: electronic media allow for instant access to structured information, facilitate new forms of communication and interactions such as electronic fora and online deliberations (cf. e.g. Talpin/Wojcik 2010) as well as eco-feedback applications in particular (Aichholzer et al. 2012), with potential benefits such as increased flexibility, speed and connectivity. The decentralised networking structure provides for instant messaging and interactions without restrictions of location and time. Outreach and speed can reduce transaction costs of communication, mobilisation and organisational strategies. Via Internet, one can offer and use interactive elements of participation processes such as

polls, checklists, questionnaires, surveys, or carbon calculators more efficiently. However, systematic empirical assessments of outcomes and impacts of e-participation are still rare (exceptions are Pratchett et al. 2009, Kubicek et al. 2011).

2. Theoretical background

Sustainable consumption and behaviour change have become a special focus in policy programmes, at least in the UK and USA, and key topics in debates around the search for a response to climate change (Warde & Southerton 2012). In the theoretical discourse on effective forms of mitigating climate change a divide between individualistic and other, more systemic approaches becomes visible. While approaches of the former type focus on individual responsibility, choice and behaviour change, their critics consider social practices, wider social change and societal innovation as crucial.

A key to such behaviour change is often seen in attitudes and values, which are being addressed by seeking to reinforce pro- and modify anti-environmental dispositions. The rationale behind is largely the intention to cure an assumed information deficit and the perceived need for environmental education of the population. Therefore, related policy concepts regard information campaigns and interventions that focus on persuading and encouraging consumers as appropriate means. However, the effects of such policies have been modest. Lifestyle changes turned out to be a more complex challenge. As a rule, they involve deeply rooted consumption patterns, hardened by habits and often constrained by external barriers.

One way out is seen in social marketing approaches promising incremental increases of climate-friendly behaviour from developing and employing tailor-made strategies for identified segments of the population (cf. Barr 2008). This strategy intends to offer sustainability policy as a positive perspective, which employs established techniques of segmentation and social marketing aiming at a "mainstreaming" of sustainable lifestyles. Critics object such approaches because they see a large part of unsustainable practices rather untouched and implicitly tolerated instead of seriously challenged (cf. Shove 2010). They also criticize the purely individualistic flavour of this approach, which neglects that behaviour is embedded in social and material contexts.

Along with these criticisms an alternative approach is offered which focuses on "social practices" which recognises the complexity of social change involved in transitions towards sustainability (Shove 2010; Shove et al. 2012). Criticising "the dominant paradigm of 'ABC' – attitude, behaviour, and choice", Shove identifies blind spots of models which focus on the concept of choice and individual behaviour. The social practice perspective claims to open up a more realistic view on social change and the conditions of changing individual behaviour; above all by taking account of the fact that individual behaviours are deeply embedded in social, institutional and material contexts. This implies that also climate-friendly or -harming behaviour is part of social practices and means that it is not only guided by one's own choice but also by relations to others around us, by what others say and do, by established patterns of living and consumption (e.g. conventions of hygiene, of travelling, holidaymaking, etc.), the specific social order and power relations in relevant contexts. The view throws light on the limits of "consumer sovereignty" and can prove fruitful for pointing out constraints to changing practices. To some extent, it also can show the way to subtle shifts in elements of practice towards pro-environmental aims.

A perspective that directly addresses the stimulation of behaviour change towards more sustainable practices by offering a suitable "choice architecture" is based on what the authors (Thaler & Sunstein 2008) call "gentle nudges". Their assumption is that it is important to anticipate the context in which people make decisions as well as the nature of decisions, and then to offer adequate decision support that influences the choice of actions towards a desired direction, such as towards climate-friendly behaviour. Thaler and Sunstein (2008) regard those decisions as most difficult which have uncertain

or delayed effects, provide little feedback or are ambiguously related with practical experience, a situation typically encountered in the context of energy consumption. Offering information to households on their consumption in previous weeks, and on average consumption of energy in the neighbourhood, together with positive and negative emoticons (as the authors did in a study among households in California) showed positive effects on behaviour: households consuming above average decreased their consumption level, but below-average consumers increased their energy use significantly. Despite the unintended "boomerang effect" the feedback of information and the opportunity for making comparisons seem to have served as a positive nudge. The effectiveness of feedback has also been found in a survey undertaken by Darby (2006) and by more recent other studies in the smart metering context (e.g. Lanzarone/Zanzi 2010), showing savings in the ranges of 1.5-15%.

3. Research questions, research design and data sources

This paper seeks to contribute to closing the existing evaluation gap, i.e. to exploring the potential role of citizen participation, in particular of electronic participation, in improving the performance of climate protection at local levels. Key questions are:

– Does participation combined with eco-feedback help changing individual attitudes, behaviour and social practices in favour of climate protection?

– Which are the impacts in terms of CO_2 reduction?

– Does electronic participation make a difference (compared to participation with traditional media)?

The contribution provides for a comparative empirical assessment building on results of the European research collaboration in the project "e2democracy" (environmental electronic democracy).[1] It allowed us to study a set of similar forms of citizen participation in climate policies at local government level in seven cities and regions in three countries: Bregenz and Mariazell region in Austria; Bremen, Bremerhaven, and Wennigsen region in Germany; and Zaragoza and Pamplona in Spain. Common core elements allow for a quasi-experimental field study and comparative assessment: at each site local government, local companies and citizens agreed on the target to reduce CO_2 emission levels by at least 2% per year; the participation process was carried out by citizen panels working with local government on achieving or exceeding the agreed target; participation was projected to last up to two years; a common carbon calculator was used for individual CO_2 balancing as a key tool; free choice of the mode of participation was offered – via traditional means (in person, via mail, telephone etc.) or via e-participation. Moreover, large-scale information measures via local media and kick-off events took place to spread invitations to all citizens plus local telephone surveys which raised the awareness of the participation opportunity.

Three types of interaction constituted the participation process:

(1) the provision of information offering guidance on climate-friendly behaviour (regular newsletters, project website, etc.);

(2) bimonthly reporting of individual consumption data (via an online carbon calculator generating individual CO_2 balances, or via a personal CO_2 household accounts book on paper with subsequent reporting via telephone, calculation and transmission of CO_2 balances by mail, supported by project staff);

(3) various forms of theme-oriented meetings and exchange (e.g. group meetings with expert talks, group excursions, chats with experts and online fora).

Providing participants with the possibility to individually monitor their energy consumption, get feedback and additional information, as well as exchange activities over a longer time period was meant to stimulate informed choices and to support responsible behaviour leading to reduced CO_2 emissions. Depending on local agendas the participation processes started at different points in time and lasted up to two years.

Data sources include *three panel surveys* that were conducted at the beginning, in the middle and at the end of the citizen panels' participation period – between spring 2010 and autumn 2012. For the first survey 495 questionnaires were returned, for the second 372 and for the third 342. A further essential data source is the participants' *CO_2 emissions* over time in specific fields of everyday life (energy consumption at home, transport, nutrition etc.) including consolidated CO_2 balances, generated from the online CO_2 calculator. Of 1,158 registered participants in total in the seven panels, 429 participants provided data up to the last measurement at the end of each panel (until autumn 2012).

4. Main results

The hypotheses behind the participatory approach were to achieve a reduction of CO_2 emissions by supporting and encouraging increased awareness of climate relevant actions and a change to (more) climate-friendly behaviour. Collective social action combined with individual information feedback including comparison and competition elements were expected to stimulate community experience, joint effort, increased awareness and reinforcement of commitments, issue-oriented exchange and social learning, a backing of individual efforts, and an empowerment for at least partial removal of constraints to sustainable behaviour, even if this cannot extend to changing social practices at large. The expectable contribution of e-participation was to enlarge participation opportunities and to reduce participation effort through economising effects and information advantages.

The gap between declared commitment and actual participation in these initiatives demanding long-term commitments and continuous input turned out to be huge. Actual participation was much lower than could be expected from declarations of intent in surveys. Participants of these local climate dialogues are characterised by significantly higher levels of interest in the issue of climate change and its mitigation, of sensitisation and issue knowledge, and of beliefs in efficacy of targeted action. However, not all are "environmentalists"; a group to be called "sensitised" constitutes the majority and around one fifth were citizens with little interest in climate issues at the outset.

Overall a clear majority of panelists made use of the opportunity to inspect their CO_2 balances, frequently or even after each data entry. A still higher percentage confirmed learning effects, awareness raising and valuable guidance on points for improvement of their balance. The opportunity to compare one's balance with others (panelists in the same region or country) was of less priority than expected, and only every second panelist ascribed an effort enhancing effect to it. Community building effects are clearly observable but community experience seems to have decreased somewhat after one year. A majority of participants reported that the collective process alleviated barriers encountered at an individual level and that it strengthened individual efforts to change climate-related habits.

The hypothesis that the design of the participation process with its potential for community building and mutual learning together with individual information feedback, monitoring and comparison of consumption effects would stimulate and enforce climate-friendly practices, is only partly confirmed. The regular provision of information and feedback to citizens over a longer time, based on their individual consumption data, encourages and reinforces responsible behaviour in favour of reduced CO_2 emissions. This tends to induce informed choices among the participants in some relevant areas. When it comes to impacts in terms of an increased awareness of climate effects, changes of behaviour and CO_2 balance, a more differentiated picture emerges. A substantial percentage of the participants shows an increased sensitisation and reports behavioural changes in certain areas of consumption, induced by the participation process. However, some activities causing higher CO_2 emissions, including high impact cases such as flights, largely persist.

On the individual level, a majority of participants improved their CO_2 balances and achieved at least a 2% reduction per year in all cities except for Pamplona, although this does not imply linear improvements across all sub-areas. Viewing the collective level, i.e. the overall CO_2 balance of each local panel, shows a less positive picture. The panels in five locations (Bregenz, Mariazell region, Bremerhaven, Wennigsen and Zaragoza) showed a CO_2 reduction according to or near to the target, whereas the panel in Bremen showed no improvement and the one in Pamplona even deterioration. Among possible explanations for these differences are variations in contextual factors such as the amount of care devoted to the participation process. On the other hand high impact activities like flights can play a decisive role so that individual improvements among the majority of participants together with the opposite trend among the rest of the panel can produce a negative collective balance.

The e-participation option increases the participation readiness (around two thirds of the participants are "onliners"). Hence the most important effect of the e-participation opportunity is to extend the participation rate, however, e-participation is far from being a panacea. Onliners also show weaker ties to the participation process and tend to drop out earlier. There is still potential for CO_2 reduction among the panels; however, demanding requirements of CO_2 calculation (collecting consumption data, entering it into a complex tool, etc.) and limited scope for sustainability improvements among participants with advanced sustainable practices decrease the interest in participating over a longer period.

5. Conclusions

Participation approaches in combination with individual eco-feedback can foster sustainable behaviour and local climate protection. Prospects for achieving targeted impacts on CO_2 balances are more mixed, more difficult to ascertain, and dependent on supportive context factors.

Participation initiatives especially attract population sections with higher issue awareness and „sustainable citizenship", less easily „mainstream" sections.

Offering a choice of participation media and a combination of traditional and electronic communication channels are important, though the majority prefers e-participation.

Major challenges are: widening and deepening participation, measuring and validating material impacts with control group data, achieving impact on social practices and policies. To extend information-centered participation towards more space for deliberative and consultative interactions between citizens and local governments seems to be crucial in this respect.

Some options for CO_2 reduction are one-off activities such as changing the electricity provider and switching to green electricity or installing new heating equipment, while others require changes of long-established consumption patterns that are hardened by habits and often constrained by

external barriers. Information provided on the basis of a rational choice model obviously does not provide an effective framework for an answer to the question of how to change such patterns and institutional constraints. Hence, the Thaler-Sunstein hypothesis of "Information saves energy" seems of limited validity. Changing individual behaviour has to come to terms with the fact that it is deeply embedded in social, institutional and material contexts and occurs as part of social practices. How these can be influenced, how they can be accounted for by different participation formats and how the methodological constraints and validity problems of CO_2 calculation can be overcome are issues which require further research.

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