



News risks and opportunities for businesses in times of climate change

The results of a survey of 4000 companies in the Bremen-Oldenburg metropolitan region in north-western Germany show that climate change is an ever more significant business management factor for companies. In this issue of SHORT AND SHARP, we present an overview of the risks and opportunities which various industries see ahead of them, and of the conclusions which can be drawn for adaptation strategies.

Today, the effects of climate change are already a major factor for business success in the view of 33 per cent of the companies questioned in the Bremen-Oldenburg metropolitan region. Especially in agriculture and construction, and also in companies of 250 employees or more, the significance of climate change is assessed as more serious than among other industries and size classes. By 2050, the majority of companies expect a major increase of the significance of climate change for business success.

This is one of the key results of a sample inquiry of 4000 companies in the Bremen-Oldenburg metropolitan region which was carried out by the University of Oldenburg during the summer of 2010. The goal of this company survey was to ascertain the extent to which regional companies assess economically relevant future challenges from climate change, and how they are orienting themselves strategically. The panel study is part of a several year investigation of climate adaptation strategies

of companies, which is designed to ascertain possible changes in their dealing with climate change and their resilience.

Climate change is already very noticeable today, particularly in the agriculture, construction, real estate and housing industries and in the tourist trade. The results show that from the point of view of the companies questioned, climate change raises the possibilities of both risks and opportunities, and also provide valuable indicators for future strategies, fields of action and innovative paths.

The results provide a point of departure for the development of concrete regional adaptation measures. The goal is a long-term climate adaptation strategy for the Bremen-Oldenburg metropolitan region in north-western Germany, and to the implementation of a "roadmap of change", in a close cooperative effort uniting business, government, academia and the general population.





Climate protection and climate adaptation belong together

A great majority of 94 per cent of the companies questioned in the Bremen-Oldenburg metropolitan region hold the opinion that both measures to reduce CO₂ and other greenhouse gas emissions, and active adaptation to these results of climate change will be required in order to manage climate change during the coming decades. Former Executive Director of the United Nations Environmental Programme, Prof. Dr. Klaus Töpfer, who advises the project ‚nordwest2050‘ on climate adaptation strategies, also makes this point: “We can handle the costs of climate adaptation if we can stay within the adaptable range of climate change, that is, a maximum increase of 2 degree Celsius. Once climate change crosses this ‘crash-barrier’, the adaptation costs will rise considerably. Adaptation to climate change and the reduction of greenhouse gas emissions are an inseparable pair.”

Climate change particularly noticeable in agriculture, construction, real estate, housing and the tourist trade

Climate change is already very noticeable today for 21 per cent of the companies questioned, particularly in the agriculture, construction, real estate and housing industries, as well as in maintenance and in the tourist trade. For about 40 per cent of respondents however, climate change is at present noticeable only insignificantly or not at all. Nonetheless, over the next ten years, the majority of companies questioned expect a clear increase in extreme events, particularly of heavy precipitation, due to climate change.

Which entrepreneurial risks and opportunities does climate change hold in store?

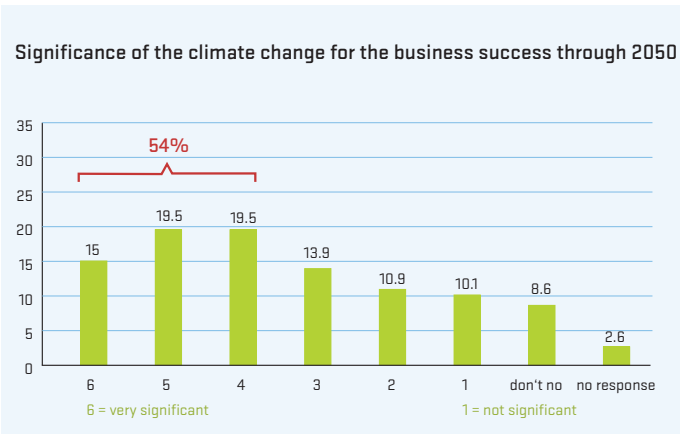
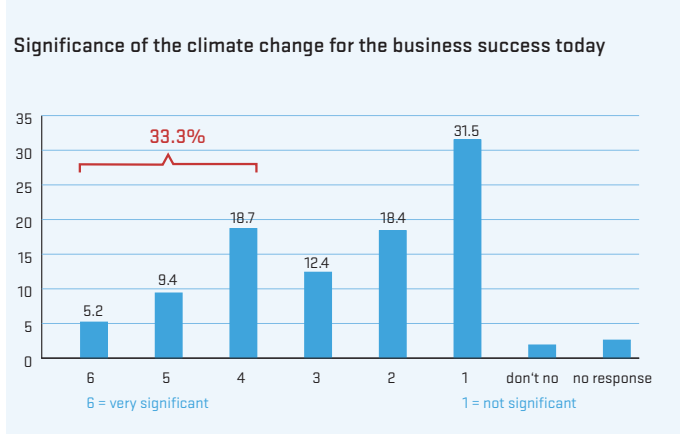
Type of effect	Risks for companies or industries	Opportunities for companies or industries
Physical	Extreme weather events (e.g. storms, heavy rain, heat, clear ice), floods, constant change of climate parameters; Bottlenecks in energy supply, lack of available logistics paths etc.	Change of climate parameters, e.g. increased wind (wind energy investments); temperature rise may permit earlier harvests, reduce heating costs, permit the cultivation of crops from more southerly climes in northern regions, etc.
State-related	Laws, stipulations, etc. which limit the entrepreneurial scope of action (e.g. stipulations for risk precautions, spatial planning regulations, state requirements for “climate neutral” products etc.)	State subsidies for research and development of climate adaptation innovations, market incentive programmes for “climate neutral” products, low-interest loans for climate adaptation investments
Market-related	Shortages of raw materials, delivery losses or delays in shipment, a drop in demand for climate damaging products, a rise in energy prices, increased commodity prices etc.	Increased demand (e.g. air conditioning of buildings, structural measures for flood protection, planting of interiors); Emergence of new areas of business (e.g. risk and adaptation consulting, “floating houses”, intelligent and flexible building façades, etc.)
Reputation	E.g. negative headlines in the media regarding entire regions, due to extreme weather events, and a resulting decline of tourism, etc	Emergence of certified risk management systems, opportunities to gain a reputation as a pioneer, and a positive public image as a “climate change ready company”, etc.



Increasing significance for business success

For about 33 per cent of the companies questioned, the effects of climate change are even today a “fairly significant” to “very significant” factor for business success. Especially in agriculture and construction, and also in companies of 250 employees or more, the significance of climate change is assessed as more serious than among other industries and size classes. In the opinion of the companies of the Bremen-Oldenburg metropolitan region, the significance for business management of climate change will increase considerably. For example, 55 per cent of the companies questioned assume that climate change will be a “fairly significant” to “very significant” factor for their individual business success through 2050.

What significance will climate change have for your business success - at present and through 2050? (n = 267; figures are percentages)



Addressing climate change seems to sharpen one's perception for strategic risks and opportunities

Approx. half the companies questioned state that the issue of climate change has already been discussed in the company. An analysis of the answers shows that those companies see its significance for their current business success as greater than do companies which have not discussed issue at the executive level to date. There are two possible reasons for this: on the one hand, these companies may in fact be affected by extreme weather events and other effects of climate change; on the other, it could also be that management-level discussion of questions involving climate change sharpens the perception for the strategic risks and opportunities involved.

A low level of knowledge in the area of climate change leads to great uncertainty

36 per cent of the companies questioned consider the uncertainties as to how and in which scale climate change will have an effect on their industry as so great that they can make no statements regarding the effects it will have on their business. There is great uncertainty, particularly among companies in the traffic and warehousing sectors, in the retail/wholesale trade, in the maintenance and repair of motor vehicles, and in agriculture, construction and energy supply. These uncertainties are particularly great among companies which assess the currently available information as very contradictory. On the other hand, companies which classify their state of knowledge as high or very high, indicate “no” or “little” uncertainty regarding the effects of climate change.

Risks and opportunities: The answers show a differentiated picture

In the view of the companies questioned, climate change will bring both risks and opportunities. The opportunity/risk ratio differs by operational area: while for the procurement department, “more risks” than opportunities were seen, the answer “more opportunities” predominated over risks in the operational areas of production, sales and research and development. The answer “neither” had the strongest support for all departments.

Effects on business management: Delivery losses

In many industries, floods, storms, extreme cold and snowfall, or long heat periods affect the timely procurement of necessary raw materials and goods, or commuting and business travel, and can also seriously impair the shipment of their own products. Some 23 per cent of the companies in the Bremen-

Oldenburg region have in the past ten years already faced situations in which they were not able to carry out shipments due to weather conditions, power failures, missing supplier products or other reasons. The main reasons were the limited usability of delivery routes due to cold and snow, or heavy precipitation. In the view of regional business, delivery shortfall on a “considerable scale” due to weather conditions, power failures or lack of supplier products will increase in future.

Liquidity problems due to weather-induced delivery losses

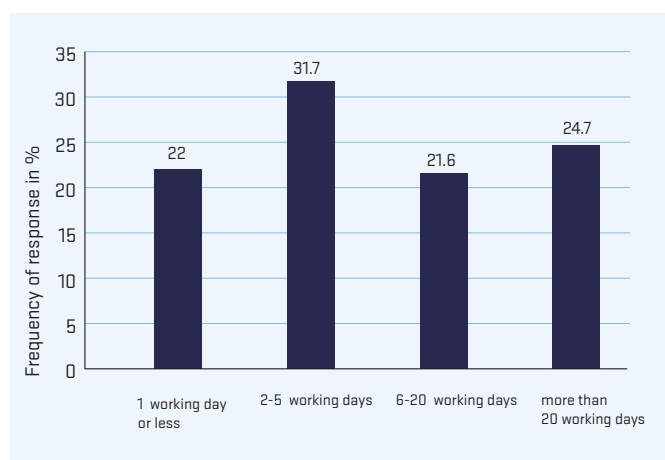
Although the majority of companies classified liquidity problems due to delivery bottlenecks or failures caused by weather (snow/ice, high water etc.) or technical problems (power failures etc.) as fairly improbable, only one third of the companies questioned excluded the possibility altogether. Particularly companies of the agriculture and construction industries, as well as small and very small businesses, expect liquidity problems considerably more frequently than do other industries, or medium-sized and large companies, respectively.

Low buffer capacities: Many companies are no longer capable of production even after a short time

More than 50 per cent of respondents would no longer be fully capable of production or operation after a week at the latest, if central suppliers were to fail to deliver. For no less than 10.4 per cent of the companies questioned, this would already be the case after less than six hours.



How long would your company be fully capable of production or operation if key suppliers were to fail completely to deliver (except power failures!) [n=259]



Very little confidence of companies in existing information sources on climate change

The development of successful corporate strategies for adjustment to climate change presupposes information as to how the climate in different areas of the world, and in the home region, is most likely to change. It especially requires that companies address the question of the significance which a change in average temperatures, or an increase in extreme weather events, will have for their own value-added chains and their own business. An important factor there is information sources which provide information about climate change for companies, and which are also seen as trustworthy by the companies which are their potential users. Here, however, there is still considerable need for action by government, chambers of commerce and business associations. For 75 per cent of the companies questioned in the Bremen-Oldenburg metropolitan region state that there is no information source which they trust in the area of climate change.



The Survey

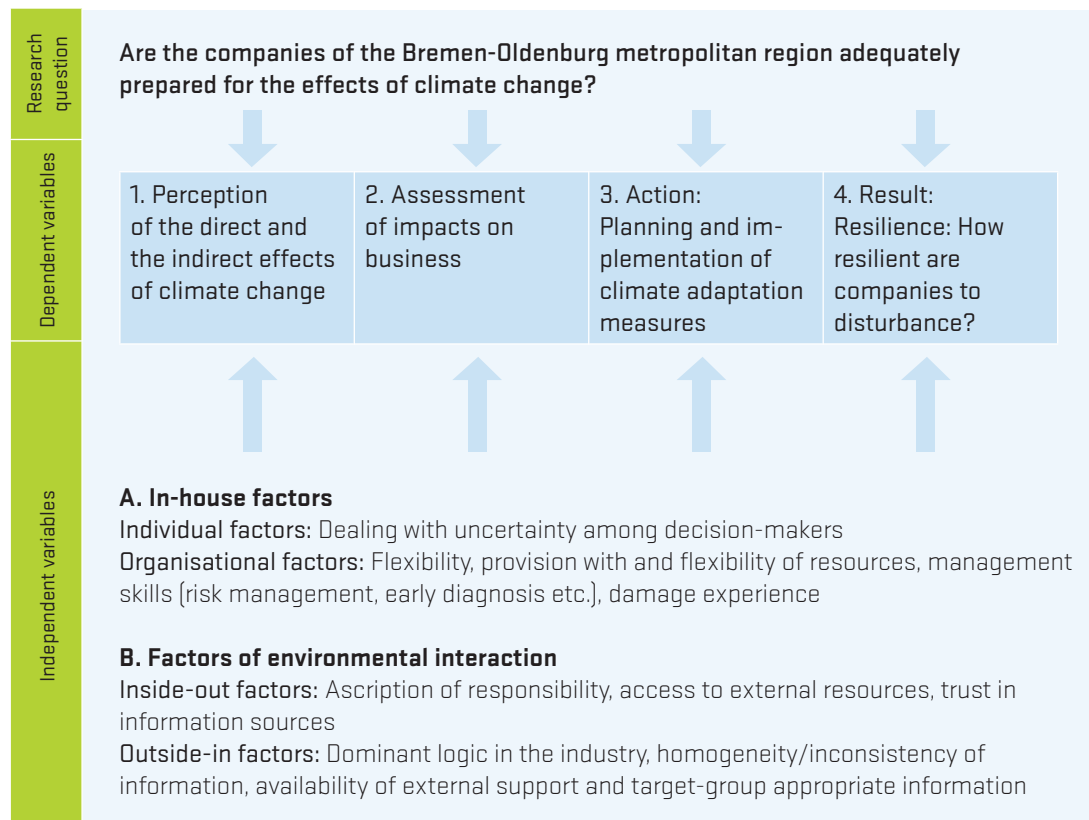
The survey of companies was carried out in the framework of the project ‚nordwest2050‘, with the support of the German Federal Ministry of Education and Research (BMBF), under the direction of Prof. Klaus Fichter of the University of Oldenburg, and is part of a several year investigation of corporate climate adaptation strategies.

The survey of companies of the Bremen-Oldenburg metropolitan region is being carried out as a panel study, with a total of three survey stages. The first survey stage was carried out in June 2010. The second and third survey stages are planned for the spring of 2012 and 2013, respectively. The entities questioned are legally independent companies based in the Bremen-Oldenburg metropolitan region, with at least one paid

employee subject to mandatory social insurance. The drawing of the sample was carried out by an external service provider, the credit information file Creditreform (Oldenburg Bolte KG). By means of random sampling, 3970 companies were selected from the Creditreform address pool; an additional 30 companies were selected systematically, and incorporated into the sample; these were partner companies in the ‚nordwest2050‘ project. The survey is carried out with the aid of a standardized questionnaire.

Altogether, 272 companies have taken part in the first survey stage, i.e. a response rate of approx. seven per cent was obtained. Of these, 267 questionnaires were usable.

The Investigation Model



The survey of companies is based on an extensive evaluation of the worldwide state of the literature and of the research on companies and climate change, carried out by Prof. Klaus Fichter and Tina Stecher. Based on preliminary theoretical work in the ‚nordwest2050‘ project, a comprehensive concept was developed for the investigation of companies in the context of climate change and climate adaptation, and the following investigation model was established.

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Summary of the Results of the Survey of Companies

- Climate change affects companies both directly (storms, heavy rain events, etc.) and indirectly (changes in the law, convolutions on markets, public debate).
- Of the companies questioned, 94 per cent hold the opinion that climate change will in coming decades require both a reduction in CO₂ emissions and measures of adaptation to climate change.
- In the Bremen-Oldenburg region, climate change has been particularly noticeable for companies in agriculture, construction, the real estate and housing industries, and the tourist trade.
- Over the next ten years, the majority of companies questioned expect a clear increase in extreme weather events.
- For 33 per cent of the companies questioned, the effects of climate change already today have a “fairly great” to “very great” significance for their business success.
- In the Bremen-Oldenburg metropolitan region, 55 per cent

of companies assume that climate change will have a “fairly great” to “very great” significance for their individual business success in the period through 2050.

- Companies see both risks and opportunities in climate change. The opportunity/risk ratio is however different according to operational area (procurement, production, sales, research and development).
- In the view of 28 per cent of the companies, it is “fairly probable” or “very probable” that they will experience delivery shortfalls on a “considerable scale” during the next ten years due to weather conditions, power failures or missing supplier products.
- In agriculture and construction, 40 per cent and 34 per cent of the companies, respectively, expect liquidity problems in coming years due to delivery shortfalls caused by weather or technical problems.
- Need for action by government, chambers of commerce and associations: 75 per cent of the companies questioned in the Bremen-Oldenburg metropolitan region say that there is no information source they trust in the area of climate change.

