

**DECISION-MAKING IN RELATION TO
CLIMATE AND CLIMATE CHANGE
IN THE PEOPLE'S REPUBLIC OF
CHINA:
FROM ADAPTATION TO SEA-LEVEL
RISE TO DESTINATION CHOICE
IN CHINESE TOURISM**

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EXECUTIVE SUMMARY

In the People's Republic of China (PRC, China), both economic power and the population are concentrated in a coastal zone that is threatened by an imminent rise in sea level. How will China adapt to this impact of climate change? Does the fact, that China still has a hierarchical governmental system, ease decision-making for such novel and complex matters? This thesis is concerned with organisational decision-making in situations affected by uncertainty. It further considers, what distinguishes decision-making by organisations from that by individuals? Climate has proven to be a major aspect in choice of destination by international tourists, but is this also the case for Chinese tourists? Given the huge expectations that the tourist industry has for the Chinese market, the motivation of Chinese tourists and their preferences in choice of destination are important and unresolved factors.

China is a country in transition. Furthermore, China is a country facing massive changes. Rapid developments in the environment or in the socio-economic system affect both organisational and individual decision-making. These include political changes as far as they impinge upon administrative bureaucracies. Climate change is undoubtedly a major cause of administrative and policy change.

The two major topics of this thesis – sea-level rise and tourism – are united by a focus on the processes of decision-making. In research on China, these topics have not yet been investigated. Climate change as a problem - and with it the acknowledgement of a rise in sea level as one of its major impacts - has emerged very recently and the tourist industry in China has only developed since the 1980s.

This thesis consists of nine chapters split into four major parts:

I - introduction and method (chapter 1),

II - sea-level rise and decision-making in the coastal zone (chapters 2-4),

III - decision-making and tourism (chapters 5-8), and

IV - a conclusion (chapter 9).¹

All analysis is carried out for China.² Qualitative methods of social and political science are used in Chapters 3, 4, 7 and 8, with statistical analysis in chapters 5 and 6. The major tools ranged from a questionnaire (chapter 5), to interviews (chapters 3 and 4) and to the analysis of newly compiled databases (chapters 5, 6 and 7).

Part II - sea-level rise and decision-making in the coastal zone - (chapters 2-4) emphasises decision-making within and among governmental institutions and highlights the constraints experienced especially while introducing long-term policies.

Chapter 2 discusses the garbage can model of organisational theory applied to the adaptative responses to sea-level rise in China, a major problem for climate change policy. The garbage can model suggests that organizational decision-making is characterized by "problematic preferences", "unclear technology" and "fluid participation" and is not rational but arises from organizational event streams associated with issues such as "problems", "solutions", "choice opportunities" and "participants", which exhibit the fluid and dynamic characteristics of mutual attraction, repulsion and changing composition. The garbage can approach was

¹ Different parts of this thesis have been published as research papers in international scientific journals or are at the time of writing are submitted for consideration. Two of them are co-authored (chapters 5 and 6).

² Chapter 5 is the only exception. It features an empirical study on the role of climate in tourist decision-making and was undertaken in Germany. China was included as a destination country and a small sample of tourists bound to China has been extracted for this thesis.

initially formulated to explain fuzzy decision-making structures within organisations and, subsequently, applied to decision-making among institutional groups and the many participants within governmental systems. Three main themes consistently occur in garbage can applications: motivation, information and power, and a straightforward decision based upon rational choice is constrained by the relevance of these themes to decision-making by institutions. Generally, it is argued that the more centralised and hierarchical a system, the less it is affected by uncertainty and ambiguity.³

The garbage can theory proved to be applicable to new issues – such as climate change – and long-term problems – such as adaptation to sea-level rise. The analysis in chapter 2 combined the garbage can approach with the three dimensions of a political system – policy, politics and polity – of which the latter has been underestimated in climate change research so far. A straightforward decision based on rational choice is constrained by the relevance these themes have in decision-making of institutions. The analysis equates polity with power structures and it shows that power is decisive in decision-making regardless of the political system. Framework compliance and information control are identified as major factors that are effective in a political system. Polity has been equated with power structures and the analysis showed that power is decisive in decision-making regardless of the political system. Moreover, the benefits of institutional change – in order to meet the demands of new challenges – are questionable as long as only parts of the system (policy, politics and polity) are addressed. Thus, the revised garbage can perspective showed that a global analysis of political and institutional structures is necessary in research into climate change.

Decision-making in the coastal zone is a complex issue. Many agencies are involved and even if a coastal zone management (CZM) scheme is in place, meaningful co-operation is not guaranteed. Chapter 3 discusses coastal zone management (CZM) in China and highlights the structural impacts the Chinese political system has on the decision-making processes involved. In order to describe the political conditions found in the country, general power structures are distinguished between the formal (the political system and the administrative set-up) and the informal (the personal networks of the *guanxi*-system). In this way, the polity of China is evaluated as an obstacle to the adoption of general CZM guidelines that are tailored for systems that are more democratic. In order to examine the potential of bottom-up, instead of top-down, approaches, two local CZM programs in the city of Xiamen and the municipality of Shanghai are compared. The very successful integrated CZM project of Xiamen is applied, in theory, to Shanghai. This device reveals that applicability not only depends on the organizational set-up of the CZM program (naming a responsible agency, allocating participating sectors, formulating goals and policies, identifying instruments, building a legislation, broad participation) but also on factors such as political will (of the responsible agency), a clear jurisdiction of responsibilities (of involved government agencies) and the acknowledgement of informal structures, such as the *guanxi*. An organizational set-up for CZM in China that includes informal power structures is proposed. A transparent jurisdiction and political system are necessary for a functioning legislation in a country like China, where classical stakeholder participation is less decisive and, therefore, power structures among agencies and the ability to cooperate gain in importance. Informal power structures are often underestimated or completely excluded from analysis, as they are difficult to measure, however, they should not be ignored. For example, the *guanxi* determine almost all spheres of life and activity in China.

Developments within the Chinese coastal areas are only considered in the short term, which is a reasonable approach given the immense economic growth and the expected

³ This only applies to the decision-making process, not to the quality of the solutions.

urbanisation rate of the region (Cheng, 2002). As shown in Chapter 4, however, adaptation to sea-level rise is a long-term task. Chapter 4 addresses decision-making under the condition of uncertainty, by discussing the current policies of adaptation to a rise in sea level in China. An analysis of ministry jurisdiction for coastal activities, such as land reclamation, coastal construction and dike building, reveals a relatively high representation by the Water Ministry, although it has no clear responsibility for the coastal area. Therefore, further emphasis is put on the possibility to integrate adaptation policies into existing organisational frameworks, such as coastal zone management or disaster management structures. The analysis concludes with a proposal for climate change management in China. The focus in this thesis on adaptation to sea-level rise showed that decision-making frameworks, and their compliance with existing organisational structures of the political system, are a major problem. Further studies on other impacts of climate change may challenge the wisdom of using the disaster management framework in climate change scenarios.

Part III - decision-making and tourism - (chapters 5-8) focuses on the short-term development of the tourism sector in China and turns from the inter-governmental decision-making analysis to that of the consumer.

Further global climate change and rise in mean temperature will have impacts on the tourism industry. Chapter 5 investigates the role of climate in the destination choice of tourists in general. The basis is a survey conducted during two summer months in 2004 at major departure points in Hamburg, Germany. It shows that climate is the most important feature for the choice of destination for the tourists surveyed. However, with climate change, the attractiveness of a destination is changed and, with a significant time lag, also the perception of that destination by tourists. A small sample of eight travellers⁴ to China indicates that climate seems less important for travellers to China than landscape and sightseeing spots. For this group, climate is more important for tourists than for business travellers, but even they rank it lower than interests in nature and cultural features. The analysis also showed that access to the sea and lakes is the second most important factor for tourists when choosing a destination. As an ancillary effect of global warming, sea-level rise will have a large effect on the tourism industry.⁵ Although visiting beaches is less important for foreign and domestic tourists in China, the effects of climate change and how the coast is perceived will be felt. Tourists will not necessarily adapt to new situations, e.g. loss of an unspoilt sea view, by changing their preferences – they would rather change their destination.

Decisions by tourists are not only affected by external factors. Their motivation to travel depends on personal preference and to some degree cultural influence. Chapter 6 features a statistical regression analysis on the behaviour of Chinese tourists from different countries⁶ and of the number of international and domestic tourists at the provincial level in China. The variables used range from climate, transportation facilities and the number as well as classification of sightseeing spots. The results yield tourists' preferences when travelling in China. Additionally, the preferences of Chinese tourists for the domestic tourism market are compared with foreign travellers' preferences; and they prove to be different. It is therefore wrong to assume that the Chinese behave like other tourists, even their ethnic kin. Cultural influence is tightly connected to other, especially social and political, influences. In comparisons of preferences between Chinese domestic tourists and foreign tourists in China, significant differences were detected. Generally, Chinese tourists shun cities, love nature, seek

⁴ The sample consists of four travellers on business and four tourists.

⁵ Access to the sea will change considerably and the quality of beaches will mostly deteriorate because of slope changes and intensified erosion.

⁶ From the PRC, Taiwan, HK and Singapore.

out the 'rich and trendy' and avoid cultural spots (at least, of domestic importance). A cautious interpretation of what Chinese tourists seek out when going abroad can be given. This largely corresponds to the results of other researchers using different methodologies. Furthermore, the role of regulation by the government-imposed ADS-system⁷ on tourist flow from China is discussed. Chinese international tourism depends on the ADS-system as a political instrument. The distribution of Chinese tourists among global destinations is likely to shift if the system is eliminated.

China is seen as a major tourist generating country and the international tourism industry projects high expectations in the number of potential Chinese travellers. Chapter 7 investigates further the motivation of Chinese tourists to travel at all. In order to further understand the role of push and pull factors,⁸ and climate as such a potential factor, an analysis into the notions of novelty-seeking and similarity-to-home in holiday choice is discussed in terms of size of the country of origin and size of the destination country. China is a large country; therefore, tourists are predisposed to domestic trips (regardless of their preference for novelty or similarity-to-home). This is valid for climate as well as other factors, since China covers almost all climate zones. A regional analysis of tourist attractions in China emphasised the importance of access to tourist spots. The preference of Chinese tourists for nature was more influenced by the natural surroundings, in general, than the absolute number of nature spots in a region. The preference of domestic Chinese tourists for the northeast of the country, and perusal of the sightseeing attractions on offer, supports the finding that Chinese preference is for attractions other than cultural or natural. These preferences are also evident in the destinations Chinese tourists visit abroad, e.g. German tours for Chinese tourists include a visit to a motor factory. Furthermore, the influence of source of information on destination choice in China is discussed. A detailed look at the selection of sources allows some conclusions to be drawn on what is communicated to which group of tourists in the country and whether official policy is more successful than commercial providers. Whereas the regression analysis in chapter 6 showed a relative importance of promoted sights (at least by official and commercial sources, less so by the self-help net) against the actual existence of spots, the descriptive analysis of the database in chapter 7 reveals a very heterogeneous picture for the sights promoted by the different sources. This shows how diversity adds to complexity, even in China, where there are fewer sources of information than elsewhere.

Chapter 8 puts Chinese tourist decision-making into context with the infrastructural findings of chapter 2 and unites some of the aspects that were investigated in chapters 6 and 7. The revised garbage can perspective revealed the importance of three features in organisational decision-making – motivation, information and power. Thus, the features important in organisational decision-making also apply to individual decision-making by tourists. What motivates a tourist is determined by personal preference and by push/pull-factors, including the degree of venturesomeness (after Plog 2002) as well as a preference for places like home or novelty. Information is important in moulding tourist behaviour, as are constraints or determining factors in the form of economic capacity or political restrictions from the ADS-system. Chapter 8 further evaluates the likely impacts of climate change on Chinese destination choice and tourism in China. A significant question is whether the growth of the tourism sector can be sustained if climate change negatively impacts on China as a tourist destination. The role of policy change and the formal ability of the Chinese governmental system to initiate this change are important for China when the government wants to guide the development of long-term and short-term solutions for the adaptation to climate change.

⁷ The Approved Destination Status (ADS) is required for a country to receive Chinese tourists on package tours.

⁸ In the tourism literature (Ryan 2003; Lau and McKercher 2004; Pearce and Lee 2005; Zhang and Lam 1999; Zhang and Lam 1999; Xiao 1997) these are factors determining why a traveller chooses to go on holiday and which destination is chosen.

This thesis has made a contribution to decision-making analysis. In the context of climate change it is important to include structural aspects in policy evaluation. In terms of decision-making by individuals and motivation by tourists, how they are influenced by economic and political conditions and the impact on their behaviour. A revised version of the garbage can theory of organisational decision-making helped in identifying these aspects. Generally, the literature discussing the original concept is sceptical as to whether the garbage can is applicable to long-term issues and to hierarchical governance systems. While discussing the long-term issue of adaptation to sea-level rise and applying the garbage can to decision-making in China, both doubts are proved unfounded.

China surely needs to adapt to sea-level rise and, whereas the range of methods available is quite clear, the organisation of response is less so. This shows that the hierarchical political system in China does not necessarily support straightforward decision-making. Too many aspects of the political system are pervasive in organisational decision-making. Therefore, the structure of the political system is as important as the major players that make and implement the decisions as well as the way issues are chosen and formulated. For decision-making by Chinese tourists, climate is not a decisive factor in destination choice but climate change may overturn this view. Essentially, decision-making by both organisations and individuals is equally complex, involving the same aspects of motivation, information and power, yet with different emphases.