



UvA-DARE (Digital Academic Repository)

From flood safety to risk management

The rise and demise of engineers in the Netherlands and the United States?

Bergsma, E.J.

Publication date

2017

Document Version

Other version

License

Other

[Link to publication](#)

Citation for published version (APA):

Bergsma, E. J. (2017). *From flood safety to risk management: The rise and demise of engineers in the Netherlands and the United States?* [Thesis, fully internal, Universiteit van Amsterdam].

General rights

It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

Disclaimer/Complaints regulations

If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: <https://uba.uva.nl/en/contact>, or a letter to: Library of the University of Amsterdam, Secretariat, Singel 425, 1012 WP Amsterdam, The Netherlands. You will be contacted as soon as possible.

Emmy Bergsma

From flood safety to risk management

The rise and demise of engineers
in the Netherlands and the United States?



Emmy Bergsma

Emmy Bergsma

From flood safety to risk management

The rise and demise of engineers
in the Netherlands and the United States?

From flood safety to risk management



From flood safety to risk management: The rise and demise of engineers in the Netherlands and the United States?

PhD Thesis, University of Amsterdam

E.J. Bergsma, Amsterdam, December 2016

ISBN 978-94-6328-123-2

Printed by Wöhrmann B.V.

Cover design by Julia & Lena van Dijk and De Weijer Design

The research for this thesis was carried out at the Department of Political Science, Faculty of Social and Behavioral Sciences, The Amsterdam Institute for Social Science Research (AISSR), University of Amsterdam.

From flood safety to risk management: The rise and demise of engineers in the Netherlands and the United States?

ACADEMISCH PROEFSCHRIFT

ter verkrijging van de graad van doctor

aan de Universiteit van Amsterdam

op gezag van de Rector Magnificus

prof. dr. ir. K.I.J. Maex

ten overstaan van een door het College voor Promoties ingestelde

commissie, in het openbaar te verdedigen in de Agnietenkapel

op vrijdag 10 februari 2017, te 10:00 uur

door Emma Johanna Bergsma

geboren te Amsterdam

Promotiecommissie:

Promotor: Prof. Dr. M Fennema (Universiteit van Amsterdam)

Copromotor: Dr. M.J.M. Maussen (Universiteit van Amsterdam)

Overige leden: Prof. dr. J.C.J.H. Aerts (VU University Amsterdam)
Prof. dr. J. Grin (Universiteit van Amsterdam)
Prof. dr. J. Gupta (Universiteit van Amsterdam/UNESCO-IHE)
Prof. dr. ir. J.P.M. van Tatenhove (Wageningen UR)
Prof. M.Z. Zwarteveen (Universiteit van Amsterdam/UNESCO-IHE)

Faculteit: Maatschappij- en Gedragwetenschappen

Contents

| | |
|---|----|
| Acknowledgements | 9 |
| List of abbreviations | 12 |
| Abstract | 13 |
| Samenvatting | 20 |
| 1. Introduction | 27 |
| 1.1 Who pays for floods? | 27 |
| 1.2 Who decides? The expert-democracy challenge | 29 |
| 1.3 Aim of this thesis | 32 |
| 2. Research design | 33 |
| 2.1 Focal area: From safety to spatial planning measures in flood governance | 33 |
| 2.2 Two national case studies on the Netherlands and the United States (US)..... | 35 |
| 2.3 Research question and conceptual clarifications..... | 37 |
| 2.2 Theoretical and analytical framework | 39 |
| 2.2.1 Institutional theory and institutional change..... | 39 |
| 2.2.2 The analytical perspective of framing | 45 |
| 2.3 A three-step approach to data collection | 48 |
| 2.4 Structure of this thesis | 51 |
| 3. The political genealogy of the Zuiderzee Works: The establishment of a safety discourse | 53 |
| 3.1 Introduction..... | 53 |
| 3.2 From plan to policy..... | 55 |
| 3.2.1 The rise of a progressive-liberal elite | 55 |
| 3.2.2 The engagement of progressive elites in Zuiderzee reclamations..... | 58 |

| | |
|---|------------|
| 3.2.3 The Zuiderzee Society and its achievements | 59 |
| 3.3 The political efforts of the Zuiderzee Society | 62 |
| 3.3.1 Dealing with arguments of a technical and financial nature. | 62 |
| 3.3.2 Resistance from the Zuiderzee fisheries industry | 72 |
| 3.4 The implementation of the Zuiderzee Works | 77 |
| 3.5 Conclusion | 78 |
| 4. Engineering space: Integrated flood risk management in the Netherlands . | 82 |
| 4.1 Introduction..... | 83 |
| 4.2 The policy arrangements perspective..... | 85 |
| 4.3 The evolution of Dutch flood governance over the course of the 20 th century ... | 87 |
| 4.4 The implementation of spatial planning measures in the Netherlands | 91 |
| 4.4.1 Room for the River | 91 |
| 4.4.2 Flood damage compensation | 94 |
| 4.4.3 The Second Delta Program | 98 |
| 4.5 Conclusion | 101 |
| 5. From levees to insurance: The spatial turn in US flood governance | 104 |
| 5.1 Introduction..... | 105 |
| 5.2 The engineers' era (1900-1920) | 106 |
| 5.3 The emergence of a spatial planning approach..... | 107 |
| 5.3.1 The geographer's floodplain management approach (1930-1950) | 107 |
| 5.3.2 Political acceptance of flood insurance (1960-1970) | 110 |
| 5.4 The institutionalization of the spatial planning approach over time..... | 114 |
| 5.4.1 Growing federal involvement under environmentalism (1970-1980)..... | 114 |
| 5.4.2 A liberal turn (1980-1990) | 118 |
| 5.4.3 Operational mode (1990-2005)..... | 119 |
| 5.5 Expert-influence in the US turn to spatial planning measures | 120 |

| | |
|--|------------|
| 5.6 The effects of expert-influence on distributive decision-making | 123 |
| 6. The evolution of US flood governance: Overcoming uncertainty and value conflict | 126 |
| 6.1 Introduction..... | 127 |
| 6.2 A framing perspective on expert-influence | 128 |
| 6.3 The National Flood Insurance Program (NFIP)..... | 130 |
| 6.4 A reconstruction of the policymaking process on NFIP reform after Katrina..... | 133 |
| 6.4.1 Different value orientations | 133 |
| 6.4.2 Technical definitions of the problem | 135 |
| 6.4.3 The construction of a joint policy frame | 138 |
| 6.4.4 Dealing with uncertainty about possible rate increases | 142 |
| 6.4.5 The 2012 Biggert-Waters Act and its implications | 146 |
| 6.5 The role and effects of experts in NFIP reform..... | 148 |
| 7. A comparative analysis of expert-influence in Dutch and US flood governance | 153 |
| 7.1 Expert-influence in flood governance: Blessing or curse?..... | 153 |
| 7.2 Theoretical and analytical framework | 157 |
| 7.2.1 The constitution and effects of expert-influence in processes of institutional change..... | 157 |
| 7.2.2 Framing as an analytical perspective | 159 |
| 7.2.3 Case studies and data collection | 160 |
| 7.3 Integrated flood risk management in the Netherlands | 162 |
| 7.3.1 The Dutch engineering approach to flood protection | 162 |
| 7.3.2 The spatial turn in Dutch flood governance | 165 |
| 7.4 The US spatial planning approach to floods | 169 |

| | |
|---|------------|
| 7.4.1 The emergence and institutionalization of the spatial planning approach in US flood governance..... | 169 |
| 7.4.2 The role of experts in policy reforms after hurricane Katrina (2005) | 173 |
| 7.5 Conclusions..... | 175 |
| 7.6 Contributions and limitations of this thesis | 181 |
| 7.6.1 Theoretical contributions and limitations | 182 |
| 7.6.2 Practical contributions and limitations | 183 |
| References | 187 |
| Literature..... | 187 |
| Parliamentary and Congressional Transcripts | 216 |
| Dutch transcripts | 216 |
| US transcripts..... | 217 |
| Online sources..... | 219 |
| Interviews and discussion meetings | 220 |