3rd European Conference on Flood Risk Management (FLOODrisk 2016)

E3S Web of Conferences Volume 7 (2016)

Lyon, France
17 - 21 October 2016

Part 1 of 3

Editors:

M. Lang
F. Klijn
P. Samuels

# TABLE OF CONTENTS

## PART 1

**SPATIAL ANALYSIS AND SIMULATION OF EXTREME COASTAL FLOODING SCENARIOS FOR NATIONAL-SCALE EMERGENCY PLANNING**

Wyncoll David, Haigh Ivan, Gouldby Ben, Hames Dominic, Laeger Stefan, Wall Andy, Hawkes Peter, Hammond

**FAILURE PROBABILITY OF REGIONAL FLOOD DEFENCES**

Lendering Kasper

**DEVELOPMENT OF LARGE SCALE INLAND FLOOD SCENARIOS FOR DISASTER RESPONSE PLANNING BASED ON SPATIAL/TEMPORAL CONDITIONAL PROBABILITY ANALYSIS**


**SHYREG, A NATIONAL DATABASE OF FLOOD FREQUENCY ESTIMATION**

Arnaud Patrick, Cantet Philippe, Odry Jean

**SYNTHETIC EVENTS FOR FLOOD RISK CALCULATION BY USING A NESTED COPULA STRUCTURE**

Franken Tim, Blanckaert Joris, Leyssen Gert

**FEH LOCAL: IMPROVING FLOOD ESTIMATES USING HISTORICAL DATA**

Prosdocimi Ilaria, Stewart Lisa, Faulkner Duncan, Mitchell Chrissy

**NATIONAL SCALE MULTIVARIATE EXTREME VALUE MODELLING OF WAVES, WINDS AND SEA LEVELS**

Gouldby Ben, Wyncoll David, Panzeri Mike, Franklin Mark, Hunt Tim, Tozer Nigel, Dornbusch Uwe, Hames Dominic, Pullen Tim, Hawkes Peter

**REDUCING UNCERTAINTY IN SMALL-CATCHMENT FLOOD PEAK ESTIMATION**

Vesuviano Gianni, Stewart Lisa, Haxton Tracey, Young Andy, Hunt Tim, Spencer Peter, Whiting Mark

**AN INVENTORY AND RISK-BASED PRIORITIZATION OF STEEP CREEK FANS IN ALBERTA, CANADA**

Holm Kris, Jakob Matthias, Scordo Elisa

**ASSESSING COASTAL FLOODING HAZARD IN URBAN AREAS: THE CASE OF ESTUARIAN VILLAGES IN THE CITY OF HYÈRES-LES-PALMIERS**

Le Roy Sylvestre, Stephanian Alexis, Pedreros Rodrigo, Bulteau Thomas, Nicolae-Lerma Alexandre, Balouin Yann

**IMPROVING STATISTICAL MODELS FOR FLOOD RISK ASSESSMENT**

Towe Ross, Tawn Jonathan, Lamb Rob, Sherlock Chris, Liu Ye

**AN UPDATED USACE APPROACH TO THE EVALUATION OF COASTAL TOTAL WATER LEVELS FOR PRESENT AND FUTURE FLOOD RISK ANALYSIS**

Moritz Heidi, White Kathleen, Gouldby Ben

**USEFULNESS OF A REGIONAL PROBABILISTIC APPROACH TO DETERMINING DESIGN DISCHARGES OF HYDROPOWER PLANTS IN ALBANIA**

Carré Jean-Claude, Stéphanie Diss, Hamm Luc

**EXTREME FLOODS REGIONALISATION IN THE TROPICAL ISLAND OF TAHITI, FRENCH POLYNESIA**

Pheulpin Lucie, Reckling Alain, Silchoix Lydie, Barriot Jean-Pierre

**EXTREME SEA LEVELS UNDER PRESENT AND FUTURE CLIMATE: A PAN-EUROPEAN DATABASE**

Paprottny Dominik, Morales-Nápoles Oswaldo, Nikulin Grigory

**JOINT PROBABILITY ANALYSIS OF EXTREME WAVE HEIGHTS AND STORM SURGES IN THE AEGEAN SEA IN A CHANGING CLIMATE**

Galiatsatou Panagiota, Prinos Panayotis

**COUPLING A GLOBAL CLIMATIC MODEL WITH INSURANCE IMPACT MODELS FOR FLOOD AND DROUGHT: AN ESTIMATION OF THE FINANCIAL IMPACT OF CLIMATE CHANGE**

Tinard Pierre, Wang Zi-Xiang, Moncoulon Martine, Regimeau Fabienne, Déqué Michel

**METHODOLOGY TO ASSESS COASTAL INFRASTRUCTURE RESILIENCE TO CLIMATE CHANGE**

Roca Marta, Hames Dominic, Gouldby Ben, Zve Eleni S., Rowlands Ohwen, Barter Peter, Grew Jo
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>STUDY OF THE EFFECT OF BURROWS OF EUROPEAN BADGERS (MELES MELES) ON THE INITIATION OF BREACHING IN DIKES</td>
<td>165</td>
</tr>
<tr>
<td>Taccari Maria Luisa, van der Meij Raymond</td>
<td></td>
</tr>
<tr>
<td>APPLYING MECHANISTIC DAM BREACH MODELS TO HISTORIC LEVEE BREACHES</td>
<td>172</td>
</tr>
<tr>
<td>Risher Paul, Gibson Stanford</td>
<td></td>
</tr>
<tr>
<td>MODELLING EROSION DEVELOPMENT DURING WAVE OVERTOPPING OF AN ASPHALT ROAD COVERED DIKE</td>
<td>184</td>
</tr>
<tr>
<td>Bomers Anouk, Aguilar Juan P., Wermink Jord J., Hulscher Suzanne J.M.H.</td>
<td></td>
</tr>
<tr>
<td>COMPARING OVERFLOW AND WAVE-OVERTOPPING INDUCED BREACH INITIATION MECHANISMS IN AN EMBANKMENT BREACH EXPERIMENT</td>
<td>192</td>
</tr>
<tr>
<td>van Damme Myron, Ponsioen Luc, Herrera Monica, Peeters Patrik</td>
<td></td>
</tr>
<tr>
<td>UNVEILING THE CONSEQUENCES OF YOUR BREACH GROWTH MODEL CHOICE</td>
<td>201</td>
</tr>
<tr>
<td>Peeters P., Heredia Gomez M., van Damme M., Visser P.J.</td>
<td></td>
</tr>
<tr>
<td>INTERPRETING THE IMPACT OF FLOOD FORECASTS BY COMBINING POLICY ANALYSIS STUDIES AND FLOOD DEFENCE</td>
<td>206</td>
</tr>
<tr>
<td>Slomp Robert, Kolen Bas, Westera Hilde, Verweij Jaap, Riedstra Dirk</td>
<td></td>
</tr>
<tr>
<td>INCORPORATING UNCERTAINTY INTO BACKWARD EROSION PIPING RISK ASSESSMENTS</td>
<td>219</td>
</tr>
<tr>
<td>Robbins Bryant A., Sharp Michael K.</td>
<td></td>
</tr>
<tr>
<td>EVALUATING THE MECHANISMS OF EROSION FOR COARSE-GRAINED MATERIALS</td>
<td>225</td>
</tr>
<tr>
<td>Corcoran Maureen K., Sharp Michael K., Wibowo Johannes L., Ellithy Ghada</td>
<td></td>
</tr>
<tr>
<td>THE RISK ANALYSIS OF LEVEE SYSTEMS: A COMPARISON OF INTERNATIONAL BEST PRACTICES</td>
<td>231</td>
</tr>
<tr>
<td>Tourment R., Beullac B., de Leeuw A., Diermanse F., Gouldby B., Wallis M.</td>
<td></td>
</tr>
<tr>
<td>RIVER LOIRE LEVEES HAZARD STUDIES – CARDIGUES’ MODEL PRINCIPLES AND UTILIZATION EXAMPLES ON BLOIS LEVEES</td>
<td>241</td>
</tr>
<tr>
<td>Durand Eduard, Maurin Jean, Bridoux Bastien, Boulay Arnaud, Bontemps Arnaud</td>
<td></td>
</tr>
<tr>
<td>COASTAL FLOOD PROTECTION SYSTEMS – CONCEPTS AND ANALYSIS</td>
<td>249</td>
</tr>
<tr>
<td>Igigabel Marc, Nédélec Yves, Bénèger Nathalie, Flouest Nicolas, Bernard Alexis, Chassé Patrick, Piét Christian</td>
<td></td>
</tr>
<tr>
<td>REFURBISHMENT AND INSTALLATION OF A MONITORING AND EARLY WARNING SYSTEM ON THE SIERROZ EMBANKMENTS IN AIX-LES-BAINS, FRANCE</td>
<td>256</td>
</tr>
<tr>
<td>Courivaud Jean-Robert, Béguin Rémi, Monier Thierry</td>
<td></td>
</tr>
<tr>
<td>ON THE IMPORTANCE OF ANALYZING FLOOD DEFENSE FAILURES</td>
<td>264</td>
</tr>
<tr>
<td>Özer Isil Ece, van Damme Myron, Schweckendiek Timo, Jonkman Sebastiaan N.</td>
<td></td>
</tr>
<tr>
<td>TIME-DEPENDENT RELIABILITY ANALYSIS OF FLOOD DEFENCE ASSETS USING GENERIC FRACTILITY CURVE</td>
<td>273</td>
</tr>
<tr>
<td>Nepal Jaya, Chen Hua-Peng, Simm Jonathan, Gouldby Ben</td>
<td></td>
</tr>
<tr>
<td>PROBABILISTIC FLOOD DEFENCE ASSESSMENT TOOLS</td>
<td>279</td>
</tr>
<tr>
<td>Slomp Robert, Knoeff Han, Bizzarri Alessandra, Bontema Marcel, de Vries Wout</td>
<td></td>
</tr>
<tr>
<td>Aloha: An innovative system for surveillance of hydraulic structures</td>
<td>293</td>
</tr>
<tr>
<td>Fauve Paul-Henri, Ghioczyk Vanina, Degezelle Valaine, Zeneu Frédéric, Morisseau Vincent</td>
<td></td>
</tr>
<tr>
<td>EVALUATION OF TEMPORARY FLOOD-FIGHTING STRUCTURES</td>
<td>302</td>
</tr>
<tr>
<td>Wibowo Johannes L., Ward Donald L.</td>
<td></td>
</tr>
<tr>
<td>ANALYSIS OF THE FILTRATION PROCESSES IN SOIL EMBANKMENT BASED ON NUMERICAL MODELLING AND TEMPERATURE MEASUREMENTS</td>
<td>312</td>
</tr>
<tr>
<td>Krawiec Krzysztof, Bukowska-Beleniak Barbara, Lesniak Andrzej, Kessler Daniel</td>
<td></td>
</tr>
<tr>
<td>UNCERTAINTY AND EXPERT ASSESSMENT FOR SUPPORTING EVALUATION OF LEVEES SAFETY</td>
<td>318</td>
</tr>
<tr>
<td>Hathout Michel, Vuillet Marc, Peyras Laurent, Carvajal Claudio, Diab Youssef</td>
<td></td>
</tr>
<tr>
<td>UNCERTAINTY ASSESSMENT OF A DIKE WITH AN ANCHORED SHEET PILE WALL USING FEM</td>
<td>324</td>
</tr>
<tr>
<td>Rippi Atikaterini, Nuttall Jonathan, Teixeira Ana, Schweckendiek Timo</td>
<td></td>
</tr>
<tr>
<td>NUMERICAL MODELLING OF LEVEE STABILITY BASED ON COUPLED MECHANICAL, THERMAL AND HYDROGEOLOGICAL PROCESSES</td>
<td>334</td>
</tr>
<tr>
<td>Dwornik Maciej, Krawiec Krzysztof, Franczyk Anna, Lesniak Andrzej</td>
<td></td>
</tr>
<tr>
<td>NUMERICAL MODELLING OF THE IMPACT OF FLOOD WAVE CYCLICALITY ON THE STABILITY OF LEVEES</td>
<td>339</td>
</tr>
<tr>
<td>Franczyk Anna, Dwornik Maciej, Lesniak Andrzej</td>
<td></td>
</tr>
<tr>
<td>BREACH MODELLING BY OVERFLOW WITH TELEMAC 2D: COMPARISON WITH LARGE SCALE EXPERIMENTS</td>
<td>345</td>
</tr>
<tr>
<td>Laroche Christophe, Alquier Mathieu, Floriani Fanny, Tejral Ron</td>
<td></td>
</tr>
</tbody>
</table>
ANALYSIS OF FLOODING IN URBAN AREAS, TAKING INTO ACCOUNT THE RESIDENCE TIME OF THE WATER ON SITE: VERACRUZ, MEXICO ................................................................. 535
Faustino De Luna C, Oscar A. Fuentes M, Laura Vélez M, Rosales Plascencia Ismene L. A.

FLOOD ANALYSIS USING HEC-RAS MODEL: A CASE STUDY FOR HAHR AL-BATIN, SAUDI ARABIA ................................................................. 542
Al-Zahrani Muhammad, Al-Areeq Ahmed, Sharif Hatim

INNOVATIONS IN IRREGULAR MESHING TO IMPROVE THE PERFORMANCE OF 2D FINITE VOLUME FLOOD SIMULATION ................................................................. 547
Jamieson Sam, Lhomme Julien, Fortune David

TRACKING THE CRITICAL OFFSHORE CONDITIONS LEADING TO INUNDATION VIA ACTIVE LEARNING OF FULL-PROCESS BASED MODELS ................................................................. 553
Jeremy Rohmer, Idier Deborah, Bulteau Thomas, Paris François

BENCHMARKING OF A BIDIMENSIONAL FLOOD ANALYSIS WITH A STRUCTURAL MEASURE IN THE CATCHMENT ROSARITO HUAHUATAY BAJA CALIFORNIA SUR, MEXICO ................................................................. 558
Faustino De Luna C, Oscar A. Fuentes M, Horacio Rubio G., Laura Vélez M.

WHERE NEXT FOR RESEARCH IN TO SIMPLIFIED SURFACE WATER FLOOD MODELLING? ................................................................................................................................. 566
Baylis Adam, Peters Selena, Van Leeuwen Zora, Hunter Neil, Gill Elliot

APPLICATION OF AN EARTH-OBSERVATION-BASED BUILDING EXPOSURE MAPPING TOOL FOR FLOOD DAMAGE ASSESSMENT ................................................................. 571
De Angeli Silvia, Dell’Acqua Fabio, Trasforini Eva

AN EMPIRICAL, FUNCTIONAL APPROACH TO DEPTH DAMAGES ................................................................................................................................. 584
Lehman Will, Hasanzadeh Nafari R.

COMPREHENSIVE FLOOD ECONOMIC LOSSES: REVIEW OF THE POTENTIAL DAMAGE AND IMPLEMENTATION OF AN AGRICULTURAL IMPACT MODEL ................................................................................................................................. 592
Mao Gwladys, Onfroy Thomas, Moncoulon David, Quantin Antoine, Robert Christian

THE COSTS AND IMPACTS OF THE WINTER 2013/14 FLOODS IN ENGLAND AND WALES ................................................................................................................................. 602
Fenn Teresa, Clarke Carl, Burgess-Gamble Lydia, Harding Emma, Oggunyoye Fola, Hick Emma, Dawks Stuart, Morris Joe, Chatterton John

TRACING THE VALUE OF DATA FOR FLOOD LOSS MODELLING ................................................................................................................................. 611
Schröter Kai, Lüdtke Stefan, Vogel Kristin, Kreibich Heidi, Merz Bruno

DAMAGE ASSESSMENT IN THE STRESS FIELD OF SCALE, COMPARABILITY AND TRANSFERABILITY ................................................................................................................................. 616
Assmann André, Jäger Stefan

TANGIBLE AND INTANGIBLE FLOOD DAMAGE EVALUATION ................................................................................................................................. 622
Frongia Sara, Sechi Giovanni M., Davison Mark

USING HEC-FIA TO IDENTIFY INDIRECT ECONOMIC LOSSES ................................................................................................................................. 629
Lehman William, Light Miles Dr.

FLOOD DAMAGE DATA ANALYSIS: TOWARDS AN IMPROVEMENT OF DATA QUALITY AND USABILITY ................................................................................................................................. 637
Molinarì Daniela, Prades Rafael, Garcia-Fernandez Mariano, Dolan Martin, Menoni Scira, Marcellini Daniela

LIFECYCLE PROBLEMS IN CONSEQUENCE ESTIMATION ................................................................................................................................. 647
Lehman William

COMPARING POST-EVENT AND PRE-EVENT DAMAGE ASSESSMENT: INFORMATION GAPS AND LESSONS LEARNT ................................................................................................................................. 653
Minucci Guido, Garcia-Fernandez Mariano, Menoni Scira, Molinarì Daniela, Jimenez Maria-Jose, Mendoza
Marina Tamara, Ballio Francesco, Berni Nicola, Tabernerì Cristina Cedazo, Franèçs Rosa Mata

SOCIETAL AND ECONOMIC IMPACTS OF FLOOD HAZARDS IN TURKEY – AN OVERVIEW ................................................................................................................................. 660
Koç Gamze, Thielen Annegret H.

FLASHFLOOD-RELATED MORTALITY IN SOUTHERN FRANCE: FIRST RESULTS FROM A NEW DATABASE ................................................................................................................................. 675
Vinet Freddy, Boissier Laurent, Saint-Martin Clotilde

PART 2

RECLAMATION’S EMPIRICAL METHOD FOR ESTIMATING LIFE LOSS DUE TO DAM FAILURE ................................................................................................................................. 685
Feinberg Bruce, Engemoen William, Fiedler William, Osrun Dan
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>THE US ARMY CORPS OF ENGINEERS SCALABLE APPROACH TO ESTIMATING LOSS OF LIFE FROM FLOODING</td>
<td>696</td>
</tr>
<tr>
<td>Needham Jason, Fields Woodrow, Lehman William</td>
<td></td>
</tr>
<tr>
<td>LOSS OF LIFE ESTIMATION – REVIEW, DEVELOPMENTS AND CHALLENGES</td>
<td>702</td>
</tr>
<tr>
<td>Jonkman S.N. (Bus), Maaskant B. (Bob), Kolen B. (Ba), Needham J.T. (Jason)</td>
<td></td>
</tr>
<tr>
<td>LESSONS FROM ANALYSING MORTALITY FROM SIX MAJOR FLOOD EVENTS IN FRANCE (1930-2010)</td>
<td>709</td>
</tr>
<tr>
<td>Boudou Martin, Lang Michel, Vinet Freddy, Coeur Denis</td>
<td></td>
</tr>
<tr>
<td>EU-INTACT-CASE STUDIES: IMPACT OF EXTREME WEATHER ON CRITICAL INFRASTRUCTURE</td>
<td>717</td>
</tr>
<tr>
<td>van Ruiten Kees, Bles Thomas, Kiel Jan</td>
<td></td>
</tr>
<tr>
<td>ADVANCED METHODOLOGY FOR RISK AND VULNERABILITY ASSESSMENT OF INTERDEPENDENCY OF CRITICAL INFRASTRUCTURE IN RESPECT TO URBAN FLOODS</td>
<td>724</td>
</tr>
<tr>
<td>Serre Damien</td>
<td></td>
</tr>
<tr>
<td>CASCADING EVENTS, TECHNOLOGY AND THE FLOODS DIRECTIVE: FUTURE CHALLENGES</td>
<td>734</td>
</tr>
<tr>
<td>Pescurilo Gianluca, Nones Michael</td>
<td></td>
</tr>
<tr>
<td>LOCAL AUTHORITIES FACING FLOOD RELATED NETWORKS FAILURES IN FRANCE</td>
<td>746</td>
</tr>
<tr>
<td>Gallet Violette, Baudoucaen Nicolas</td>
<td></td>
</tr>
<tr>
<td>FLOOD VULNERABILITY OF CRITICAL INFRASTRUCTURE IN CORK, IRELAND</td>
<td>754</td>
</tr>
<tr>
<td>de Brauin Karin M., Cumiskey Lydia, Ní Dhubhda Róisin, Houjjet Micheline, Hynes William</td>
<td></td>
</tr>
<tr>
<td>DISRUPTION AND ADAPTATION OF URBAN TRANSPORT NETWORKS FROM FLOODING</td>
<td>764</td>
</tr>
<tr>
<td>Pregolato Maria, Ford Alistair, Dawson Richard</td>
<td></td>
</tr>
<tr>
<td>IMPACT OF EXTREME WEATHER ON CRITICAL INFRASTRUCTURE: THE EU-INTACT RISK FRAMEWORK</td>
<td>772</td>
</tr>
<tr>
<td>Tagg Andrew, Räikkönen Minna, Miki Kari, Collell Marta Roca</td>
<td></td>
</tr>
<tr>
<td>ANALYSIS OF DISRUPTIONS CASCADE EFFECT WITHIN AND BETWEEN URBAN SOCIO-TECHNICAL SYSTEMS IN A CONTEXT OF RISKS</td>
<td>780</td>
</tr>
<tr>
<td>Gonzoya Michael, Barroca Bruno, Gauthier Pierre-Etienne, Diab Youssef</td>
<td></td>
</tr>
<tr>
<td>RISK EVALUATION OF DOMINO EFFECT OF DAM FAILURES ON SMALL RIVER-BASINS</td>
<td>789</td>
</tr>
<tr>
<td>Vanícek Ivan, Vanícek Jiri, Pevcval Tomáš</td>
<td></td>
</tr>
<tr>
<td>HEAVY RAINFALL: AN UNDERESTIMATED ENVIRONMENTAL RISK FOR BUILDINGS?</td>
<td>795</td>
</tr>
<tr>
<td>Golz Sebastian, Naumann Thomas, Neubert Marco, Günther Benno</td>
<td></td>
</tr>
<tr>
<td>VULNERABILITY AND SOCIAL RESILIENCE: COMPARISON OF TWO NEIGHBORHOODS IN NEW ORLEANS AFTER HURRICANE KATRINA</td>
<td>802</td>
</tr>
<tr>
<td>Leroy Jeanne, Amdal Jan, Vuillet Marc, Cariolet Jean-Marie, Diab Youssef, Becue Vincent</td>
<td></td>
</tr>
<tr>
<td>RESILIENCE IN FLOOD RISK MANAGEMENT – EXPLORING ITS ADDED VALUE FOR SCIENCE AND PRACTICE</td>
<td>812</td>
</tr>
<tr>
<td>Schantz Jochen</td>
<td></td>
</tr>
<tr>
<td>ASSESSING FLASH FLOOD VULNERABILITY USING A MULTI-VULNERABILITY APPROACH</td>
<td>821</td>
</tr>
<tr>
<td>Karagiorgos Konstantinos, Thaler Thomas, Maris Fotsis, Fuchx Sven</td>
<td></td>
</tr>
<tr>
<td>FROM THE RISK CULTURE TO THE LOCAL CULTURES OF RISK. AN ETHNOGRAPHIC INVESTIGATION OF LIVING WITH A CONSTANT FLOOD RISK IN THE SOUTH EAST OF FRANCE</td>
<td>828</td>
</tr>
<tr>
<td>Durand Séverine</td>
<td></td>
</tr>
<tr>
<td>FLOOD ACTION PROGRAMS (PAPI): RATING THE FLOOD’S COLLECTIVE VULNERABILITY THROUGH THE IMPLEMENTATION OF AN INTEGRATED PUBLIC POLICY TOOL</td>
<td>833</td>
</tr>
<tr>
<td>Guillier Flora</td>
<td></td>
</tr>
<tr>
<td>A NOVEL APPROACH TO FLOOD RISK ASSESSMENT: THE EXPOSURE-VULNERABILITY MATRICES</td>
<td>842</td>
</tr>
<tr>
<td>Naso Susanna, Chen Albert S., Aronica Giusepppe T., Djordjevic Slobodan</td>
<td></td>
</tr>
<tr>
<td>SPATIOTEMPORAL ASPECTS OF FLOOD EXPOSURE IN SWITZERLAND</td>
<td>850</td>
</tr>
<tr>
<td>Röhlsberger Veronika, Zischg Andreas, Keiler Margreth</td>
<td></td>
</tr>
<tr>
<td>‘PIECES OF KIT’ ARE NOT ENOUGH: THE ROLE OF INFRASTRUCTURE IN COMMUNITY RESILIENCE</td>
<td>855</td>
</tr>
<tr>
<td>Orr Paula, Twigger-Ross Clare, Brooks Katya, Sadausakis Rolands</td>
<td></td>
</tr>
<tr>
<td>INCREASING SMALL BUSINESS RESILIENCE TO FLOOD RISK: CO-PRODUCTION IN THE DEVELOPMENT OF A PROTOTYPE E-LEARNING TOOL TO PROMOTE SMALL BUSINESS ADAPTATION TO FLOOD RISK</td>
<td>864</td>
</tr>
<tr>
<td>McEwen Lindsey, Wragg Amanda, Harries Tim</td>
<td></td>
</tr>
</tbody>
</table>
SESAME: EXPLORING SMALL BUSINESSES’ BEHAVIOUR TO ENHANCE RESILIENCE TO FLOODING ................................................................. 870
Kai, Vorogushyn Sergiy, Dunn Christopher, Baker Penni, Fleming Matthew

THE HOLISTIC INTEGRITY TEST (HIT) - QUANTIFIED RESILIENCE ANALYSIS ................................................................. 878
Dobson Mike, Smith Paul, Evans Helen, Chatterton John

VULNERABILITY INDEX – APPLICATION AND SUITABILITY OF DIFFERENT METHODOLOGIES APPLIED TO THE MUNICIPALITY OF CUIABA, MATO GROSSO - BRAZIL ................................................................. 889
Silva Gabrielly, Miguez Marcelo, Di Gregorio Leonildo, Verid Aline

FLOOD RISK VULNERABILITY ASSESSMENT: HIERARCHIZATION OF THE MAIN FACTORS AT A REGIONAL SCALE ................................................................. 900
Kolli Zéhir, Jouannic Gwenael, Marchetti Mario, Legendre Tiffany, Gastaud Philippe, Gargani Julien, Arki Fabrice

INFLUENCES OF REGIONAL DEVELOPMENT ON LAND USE OF NAGARA BASIN AND FLOOD RISK CONTROL ................................................................. 910
Banha Michiko

FROM THE RISK CULTURE TO THE LOCAL CULTURES OF RISK. AN ETHNOGRAPHIC INVESTIGATION OF LIVING WITH A CONSTANT FLOOD RISK IN THE SOUTH EAST OF FRANCE ................................................................. 917
Durand Séverine

SUSTAINABLE FLOOD MEMORIES, LAY KNOWLEDGES AND THE DEVELOPMENT OF COMMUNITY RESILIENCE TO FUTURE FLOOD RISK ................................................................. 922
McEven Lindsey, Garde-Hansen Joanne, Holmes Andrew

DYNAMIC FLOOD WEBMAPPING: AN OPERATIONAL AND COST-LIMITED TOOL TO OPTIMIZE CRISIS MANAGEMENT ................................................................. 928
Strappazzon Quentin, Koch Arnaud, Guesdon Loick, Delbec Marc

FLOOD RISK TO THE STRATEGIC ROAD NETWORK IN ENGLAND ................................................................. 934
Hankin Barry, Craigen Iain, Rogers Will, Morphet Joanne, Bailey Andy, Whitehead Michael

ASSESSMENT OF VULNERABILITY TO STORM INDUCED FLOOD HAZARD ALONG DIVERSE COASTLINE SETTINGS ................................................................. 941
Valchev Nikolay, Andreeva Nataliya, Efimtova Petya, Prodamov Bogdan, Koniev Ilyan

THE USE OF A FLOOD INDEX TO CHARACTERISE FLOODING IN THE NORTH-EASTERN REGION OF BANGLADESH ................................................................. 952
Bhattacharya B., Islam T., Masud S., Suman A., Solomatine D.P.

RISK VIP: EVALUATION OF FLOOD RISK ON THE FRENCH RAILWAY NETWORK USING AN INNOVATIVE GIS APPROACH ................................................................. 957
Cheetham Mark, Chiozaome Francois, Breder Laurent

USE OF POST-EVENT SURVEYS OF IMPACTS ON RAILWAYS FOR THE EVALUATION OF THE IIRP METHOD FOR SURFACE RUNOFF MAPPING ................................................................. 967
Lagadec Lilly-Rose, Breil Pascal, Chazelle Blandine, Braud Isabelle, Moulin Loic

FLOOD MAPS IN THE CZECH REPUBLIC: CONTENT, PERCEPTION AND INFORMATION VALUE ................................................................. 979
Klemešová Kamila

QUICK ESTIMATE OF EXTREME FLOODS WATER LEVELS ................................................................. 988
Paque André, Poulard Christine, Faure Jean-Baptiste

HYDRODYNAMIC SYSTEM BEHAVIOUR: ITS ANALYSIS AND IMPLICATIONS FOR FLOOD RISK MANAGEMENT ................................................................. 994
de Bruijn Karin M., Diermanse Ferdinand L.M., van der Doef Marcel, Klijn Frans

TOWARDS A WHOLE-NETWORK RISK ASSESSMENT FOR RAILWAY BRIDGE FAILURES CAUSED BY SCOUR DURING FLOOD EVENTS ................................................................. 1002
Lamb Rob, Pant Raghav, Hall Jim

UNCERTAINTY IN DAM FAILURE CONSEQUENCE ESTIMATES ................................................................. 1006
McCarr Martin W. Jr., Paxson Greg

BELIEVE IT OR NOT? THE CHALLENGE OF VALIDATING LARGE SCALE PROBABILISTIC RISK MODELS ................................................................. 1014
Sayers Paul, Lamb Rob, Panzeri Mike, Bowman Hayley, Hall Jim, Horritt Matt, Penning-Rossell Edmund

LARGE-SCALE FLOOD RISK ASSESSMENT USING A COUPLED MODEL CHAIN ................................................................. 1022
Merz Bruno, Apel Heiko, Dung Nguyen Viet, Falter Daniela, Hundecha Yeshawetesfa, Kreibich Heidi, Schröter Kai, Vorogushyn Sergiy

FLOOD RISK MANAGEMENT WITH HEC-WAT AND THE FRA COMPUTE OPTION ................................................................. 1027
Dunn Christopher, Baker Penni, Fleming Matthew
ASSESSING FLUVIAL FLOOD RISK IN URBAN ENVIRONMENTS: A CASE STUDY ................................................................. 1038
Longo Elisa, Aronica Giuseppe Tito, Di Baldassarre Giuliano, Mukolwe Micah

CRAF PHASE 1, A FRAMEWORK TO IDENTIFY COASTAL HOTSPOTS TO STORM IMPACTS ................................................................. 1043
Ferreira Oscar, Viavattene Christophe, Jiménez José, Bole Annelles, Plomaritis Theocaris, Cossias Susana, Smets Steven

LARGE-SCALE AND HIGH-RESOLUTION FLOOD RISK MODEL FOR JAPAN ................................................................. 1052
Asteerawatt Anongnart, Tsalaivas Dinoshenfs, Azemar Frederic, Ghosh Sourina, Hilberts Arno

RIVER CORRECTIONS AND LONG-TERM CHANGES IN FLOOD RISK IN THE AARE VALLEY, SWITZERLAND ................................................................. 1057
Zischg Andreas

RISK-INFORMED LOCAL ACTION PLANNING AGAINST FLOODING: LESSONS LEARNT AND WAY FORWARD FOR A CASE STUDY IN SPAIN ................................................................. 1064

MAKING ROOM FOR RIVERS: QUANTIFICATION OF BENEFITS FROM A FLOOD RISK PERSPECTIVE ................................................................. 1072
Asselman Nathalie E.M., Klijn Frans

THE NORTH ATLANTIC COAST COMPREHENSIVE STUDY AND THE US ARMY CORPS OF ENGINEERS SANDY RECOVERY PROGRAM ................................................................. 1080
Henn Roselle, Vetri Joseph, Leach David

TAKING INTO ACCOUNT PROTECTIVE WORKS IN LAND-USE PLANNING FOR MOUNTAIN TORRENTIAL FLOODS: STATE OF THE ART OF PRESENT FRENCH PRACTICES ................................................................. 1086
Philippe Félix, Carladous Simon, Tacnet Jean-Marc, Bouvet Philippe

INTERNATIONAL APPROACHES TO THE HYDRAULIC CONTROL OF SURFACE WATER RUNOFF IN MITIGATING FLOOD AND ENVIRONMENTAL RISKS ................................................................. 1098

FLOOD PROTECTION AS A KEY-COMPONENT OF THE ENVIRONMENTAL RESTORATION OF CANAL DEL DIQUE, COLOMBIA ................................................................. 1108
Sokolowicz Marius, Wijma Eisse, Nomden Harm, Driessen Tjeerd, van Agten Quintijn, Carvajal Fortunato

INVENTORY OF ARMOURSTONE ................................................................. 1115
Le Turda Valèry, Igigabel Marc, Barlier Sébastien, Masset Jean-Paul, Bodet Raphaël, Dumas Mikael, Robert Nicolas, Berenger Bruno

LEVEES, DIVERSION CANALS OR FLOOD EXPANSION AREAS? ................................................................. 1119
Tournem R., Beullac B., Degoutte G., Patouillard S., Maurin J.

ESTABLISHING VEGETATED FORESHORES TO INCREASE DIKE SAFETY ALONG LAKE SHORES ................................................................. 1126
Jasper, de Vries Jaap van Thiel

TIDAL RIVER MANAGEMENT (TRM) AND TIDAL BASIN MANAGEMENT (TBM): A CASE STUDY ON BANGLADESH ................................................................. 1132
Talchabhadel Rocky, Nakagawa Hajime, Kawaike Kenji

EFFECTIVENESS AND APPLICABILITY OF FLOOD BARRIERS FOR RISK MITIGATION IN FLASH-FLOOD PRONE MEDITERRANEAN AREA ................................................................. 1139
Rappazzo Dario, Aronica Giuseppe Tito

TOWARDS A BETTER UNDERSTANDING OF THE TODAY FRENCH TORRENTS MANAGEMENT POLICY THROUGH A HISTORICAL PERSPECTIVE ................................................................. 1145
Carladous Simon, Pifon Guillaume, Recking Alain, Liébault Frédéric, Richard Didier, Tacnet Jean Marc, Kuss Damien, Philippe Félix, Queffélec Yann, Marco Olivier

RESILIENCE IN THE BUILT ENVIRONMENT: HOW TO EVALUATE THE IMPACTS OF FLOOD RESILIENT BUILDING TECHNOLOGIES? ................................................................. 1157
Goltz Sebastian

ASSESSMENT OF FLOOD LOSS MODEL TRANSFERABILITY CONSIDERING CHANGES IN PRECAUTION OF FLOOD-AFFECTED RESIDENTS IN GERMANY ................................................................. 1170
Kienzler Sarah, Kreibich Heidi, Müller Meike, Pech Ina, Thieken Annegret H.

RISK REDUCTION BY COMBINING NATURE VALUES WITH FLOOD PROTECTION? ................................................................. 1181
Van Loo-Steensma Jantsje M., Kok Mathijs

A NEW STANDARD FOR FLOOD RISKS AND RESILIENCE OF BUILDINGS: NEW BUILD AND RETROFIT ................................................................. 1191
Tagg Andrew, Laverty Kevin, Escarameia Manuela, Garvin Stephen, Cripps Alan, Craig Robbie, Clutterbuck Adam
EXPLORING THE CO-PRODUCTION OF DIGITAL STORYTELLING FOR LAY KNOWLEDGE EXCHANGE WITHIN AND BETWEEN FLOOD RISK COMMUNITIES: THE CASE OF THE RIVER SEVERN, UK

Holmes Andrew, McEwen Lindsey, Hansen Joanne Garde

SUDS AND HUMAN BEHAVIOUR: CO-DEVELOPING SOLUTIONS TO ENCOURAGE SUSTAINABLE BEHAVIOUR

Everett Glyn, Lamond Jessica

PART 3

ORRION: A SPECIFIC INFORMATION SHARING TOOL TO (RE)BUILD A “FLOOD RISK CULTURE” IN THE RHINE GRABEN (FRANCE - GERMANY)

Martin Brice, Giacomo Florio, Forst Benjamin, Edelblute Charlotte, Holleville Nicolas, Vitoax Marie-Clarie, Glaser Rüdiger, Himmelsbach Iso, Schonhein Johannes, Heitz Carine, Wassmer Patrick, Haziza Emma, Christiany Luc

LESSONS LEARNT FROM RECENT CITIZEN SCIENCE INITIATIVES TO DOCUMENT FLOODS IN FRANCE, ARGENTINA AND NEW ZEALAND

Le Coz Jérôme, Patalano Antoine, Collins Daniel, Guillén Nicolás Federico, Garcia Carlos Marcelo, Smart Graeme M., Bin Jochen, Chiaverini Antoine, Le Boarscaud Raphaël, Dramais Guillaume, Braid Isabelle

LESSONS FROM THE AUTUMN 2014 FLASH FLOODS IN THE CITY OF NÎMES AND ITS NEIGHBORHOOD (FRANCE): BEHAVIOR OF SEVERAL MITIGATION DAMS AND HYDROLOGICAL ANALYSIS

Fouchier Catherine, Mériaux Patrice, Pla Guillaume, Nuel Jean-Luc, Renailleau Etienne, Royet Paul

POST-FLOOD DAMAGE DATA: REQUIREMENTS FOR DISASTER FORENSIC INVESTIGATION

Dolan Martin, Walliman Nicholas, Molinari Daniela, Menoni Scira, Ogden Raymond, Amouzad Shahrazad, Ballio Francesco

LEARNING FROM AND FOR RARE FLOODS IN DRESDEN – HOW PUBLIC OFFICIALS INTERPRET DAMAGE SIMULATION RESULTS AT THE BUILDING TYPE LEVEL

Hutter Gerard, Schinke Reinhard

FLOODS IN VAR, SOUTH EASTERN FRANCE, JANUARY 2014 – INVOLVEMENT OF LOCAL AND NATIONAL ACTORS IN AN EXPERIENCE FEEDBACK

Esposito Christophe, Fromental Anne-Marie, Alquier Mathieu, Roux Isabelle

RISC-KIT: RESILIENCE-INCREASING STRATEGIES FOR COASTS

van Dongeren Ap, Ciavola Paolo, Martinez Grit, Viavattene Christophe, DeKleermaeker Simone, Ferreira Oscar, Costa Cristina, McCall Robert

IMPACT OF THE NEW SENDAI FRAMEWORK FOR DISASTER RISK REDUCTION ON PARIS FLOOD PREVENTION PROGRAM

Thepot Regis, Goujard Pascal, Gache Frédéric

POST-DISASTER RECOVERY: THE CHALLENGE OF ANTICIPATION

Mostty Annabelle, Vinet Freddy

POST-DISASTER RECOVERY: HOW TO ENCOURAGE THE EMERGENCY OF ECONOMIC AND SOCIAL DYNAMICS TO IMPROVE RESILIENCE?

Jouannic Gwenaël, Crozier Denis, Chloé Tran Duc Minh, Kolli Zébir, Arki Fabrice, Matagne Eric, Arbizzi Sandrine, Bomperin Laetitia

PROMOTING ADAPTIVE FLOOD RISK MANAGEMENT: THE ROLE AND POTENTIAL OF FLOOD RECOVERY MECHANISMS

Priest Sally J, Penning-Rowsell Edmund C., Suykens Cathy

CITIZEN INVOLVEMENT IN FLOOD RISK GOVERNANCE: FLOOD GROUPS AND NETWORKS

Twigger-Ross Clare, Orr Paula, Brooks Katya, Saduaskis Rolands

DEVELOPMENT OF A DOWNSTREAM EMERGENCY RESPONSE SERVICE FOR FLOOD AND RELATED RISKS IN ROMANIA BASED ON SATELLITE DATA

Stancalie Gheorghe, Craciunescu Vasile, Irimiaescu Anisoara

TOWARDS IMPROVED MANAGEMENT OF COASTAL SUBMERSION CRISES – CRISMA-WAVE SOLUTION AS AN EXAMPLE OF CRISMA FRAMEWORK APPLICATION

Erlich Marc, Coulet Christophe, De Groof Arnaud
A SPACE-TIME GEOSTATISTICAL APPROACH FOR ENSEMBLE RAINFALL NOWCASTING
Casert A., Ramos M.-H., Javelle P., Leblois E. ............................................................... 1508

ASSESSING FLOOD FORECAST UNCERTAINTY WITH FUZZY ARITHMETIC
de Bryne Bertrand, Fayet Laurence, Laborie Vanessa ................................................ 1513

EARLY WARNING FLOOD DEFENCE SYSTEM, EXPERIENCE FROM THE FIELD
van Putten Rob ............................................................................................................. 1518

INFLUENCE OF THE SPATIAL VARIABILITY OF RAINFALL ON HYDROGRAPH
MODELLING AT CATCHMENT OUTLET: A CASE STUDY IN THE CEVENNES REGION,
FRANCE ............................................................................................................................... 1524

EMMANUEL ISABELLE, PAYRASTRE OLIVIER, ANDRIEU HERVE, ZUBER FELICIAN
OPERATIONAL FORECAST UNCERTAINTY ASSESSMENT FOR BETTER INFORMATION
TO STAKEHOLDERS AND CRISIS MANAGERS ........................................................................ 1532

BERNHARDT LIONEL, PIOTTE OLIVIER, GAUMÉ ÉRIC, MARTY RENAUD, ARDILONÉE CONSTANTIN
A SURFACE WATER FLOODING IMPACT LIBRARY FOR FLOOD RISK ASSESSMENT
Aldridge Timothy, Gunawan Oliver, Moore Robert J., Cole Steven J., Price David ............................................................... 1542

UNDERSTANDING THE NATIONAL PERFORMANCE OF FLOOD FORECASTING MODELS
TO GUIDE INCIDENT MANAGEMENT AND INVESTMENT
Wells Steven, Robson Alice, Moore Robert J., Cole Steven J., Rudd Alison ................. 1552

FROM HIGH WATERS FORECASTS TO FLOODED AREAS FORECASTS
Escudier Aurélie, Hans Pierre-Adrien, Astier Christophe, Souldadji Jean-Luc ............................................................................................................. 1559

HOW TO MANAGE FLOOD FORECASTING IN A CATCHMENT WITH HIGH FLOOD RISK -
EXPERIENCES FROM THE EMSCHER
Johann Georg, Hartung Alexander ................................................................................ 1568

SETTING UP A FRENCH NATIONAL FLASH FLOOD WARNING SYSTEM FOR UNGAUGED
CATCHMENTS BASED ON THE AIGA METHOD
Javelle Pierre, Organde Didier, Demargne Julie, Saint-Martin Clotilde, de Saint-Aubin Céline, Garandeau Léa, Janet Bruno ............................................................... 1573

PROBABILISTIC FLOOD FORECASTING ON THE RHONE RIVER: EVALUATION WITH
ENSEMBLE AND ANALOGUE-BASED PRECIPITATION FORECASTS
BELLIER JOSEPH, ZIN ISABELLE, SIBLOT SANISLAS, BONTRON GUILLAUME ................. 1584

INTEGRATED REPRESENTATION OF HYDROPOWER FACILITIES IN AN OPERATIONAL
FLOOD WARNING SYSTEM FOR A MOUNTAINOUS WATERSHED
CLAUDINE AURÉLIE, GAUTHERON ALAIN, ZIN ISABELLE, OBLED CHARLES, PERRET CHRISTIAN, BELLEVILLE ARNAUD ............................................................... 1595

REGIONAL MODELS FOR DISTRIBUTED FLASH-FLOOD NOWCASTING: TOWARDS AN
ESTIMATION OF POTENTIAL IMPACTS AND DAMAGES
Le Bihan Guillaume, Payrastrer Olivier, Gaume Eric, Moncoulon David, Pons Frédéric ............................................................................................................. 1607

MONITORING AND ANTICIPATING FLOODS IN FRANCE
LELEN ISABELLE, JANET BRUNO, PIOTTE OLIVIER, ESCUDIER AURÉLIE, DE SAINT-AUBIN CÉLINE, SOULDADJI JEAN-LUC, ROCET ISABELLE, JOURDAN DIDIER, PARADIS DENIS ............................................................................................................. 1618

REAL-TIME FORECASTS OF FLOOD HAZARD AND IMPACT: SOME UK EXPERIENCES
Cole Steven J., Moore Robert J., Wells Steven C., Mattingley Paul S. ......................... 1625

RAINFALL THRESHOLDS DERIVATION FOR WARNING PLUVIAL FLOODING RISK IN
URBANISED AREAS
Candela Angela, Aronica Giuseppe Tito ........................................................................ 1636

DEVELOPMENT OF GENERIC TOOLS FOR COASTAL EARLY WARNING AND DECISION
SUPPORT
Boogaard Tom, De Kleermaker Simone, Jaeger Wiebke S., van Dongeren Ap ............ 1642

PROTOTYPES OF RISK-BASED FLOOD FORECASTING SYSTEMS IN THE NETHERLANDS
AND ITALY
Bachmann D., Eilander D., de Leeuw A., de Bruin K., Diermanse F., Weerts A., Beckers J. ............................................................................................................. 1646

METHODS AND TOOLS TO SUPPORT REAL TIME RISK-BASED FLOOD FORECASTING - A
UK PILOT APPLICATION
Brown Emma, Bachmann Daniel, Cranston Michael, de Leeuw Annemargreet, Boelee Leonore, Diermanse Ferdinand, Eilander Dirk, de Bruin Karijn, Weerts Albrecht, Hazlewood Caroline, Beckers Joost ............................................................................................................. 1655

REAL-TIME FLOOD INUNDATION FORECASTING AND MAPPING FOR KEY RAILWAY
INFRASTRUCTURE: A UK CASE STUDY
Murphy Alexandra T., Goulabdy Ben, Cole Steven J., Moore Robert J., Kendall Helen ............................................................... 1663

DEVELOPMENT OF A FLOOD WARNING SIMULATION SYSTEM: A CASE STUDY OF 2007
TEWKESBURY FLOOD
Wang Chen, Jiang Yang, Xie Huan, Miller David, Brown Iain ......................... 1671
STRENGTHENING AND REDESIGNING FLOOD RISK GOVERNANCE IN EUROPE: AN OVERVIEW OF SEVEN KEY ISSUES AND HOW THEY ARE BEING DEALT WITH IN SIX EUROPEAN COUNTRIES ................................................................. 1834

Hegger Dries, Driessen Peter, Bakker Marloes, Dieperink Carol

SUPPORTING DECISION-MAKING FOR CHANNEL CONVEYANCE MAINTENANCE .................................................. 1839

Roca Marta, Rushworth Adrian, Dennes Dave

COASTAL HAZARDS MAPPING: WHICH OBSTACLES PREVENT THE STAKEHOLDERS FROM REACHING A CONSENSUS? ..................................................................................................................... 1845

Perkerin Céline, Mear-Forres Catherine, Denauw Yann

REFLECTING SOCIETAL VALUES IN DESIGNING FLOOD RISK MANAGEMENT STRATEGIES ........................................... 1857

Adamson Mark, O'Sullivan John, Bedri Zehina

PROGRESS AND CHALLENGES IN FOSTERING RISK PREVENTION AND MITIGATION IN A CROSS-COUNTRY COMPARATIVE PERSPECTIVE – OECD CASE STUDY ON THE RHONE RIVER .............................................................................................................................. 1864

Morel Mathieu, Gamper Catherine Désirée, Gentric Jessica

ALTERNATIVE BUSINESS MODELS FOR FLOOD RISK MANAGEMENT INFRASTRUCTURE ........................................ 1870

Walsh Claire, Burke Steven, Glendinning Stephanie, Dawson Richard

DUTCH FLOOD PROTECTION POLICY AND MEASURES BASED ON RISK ASSESSMENT ............................................. 1879

Jorissen Richard, Kraaij Erik, Tromp Ellen

TOWARD GENERALIZED DECISION SUPPORT SYSTEMS FOR FLOOD RISK MANAGEMENT ...................................................... 1890

Muste Marian Y., Firroozfar Ali Reza

LONG TERM INVESTMENT SCENARIOS AND AN OPPORTUNITY TO COLLABORATE .................................................... 1902

Steel Michael, Day Jonathan

FLOOD RISK MANAGEMENT: CASES STUDIES IN FRENCH MEDITERRANEAN AREA ...................................................... 1907

Defossez Stéphanie, Rey Tony, Vinet Freddy, Boissier Laurent

A REGIONAL PROCESS UNDER THE INTERNATIONAL INITIATIVE FOR IFM ........................................................................ 1913

Murase Masaaki, Iwami Yoichi, Sawano Hisayoshi, Tokunaga Yoshio, Miyake Katsuhito, Takeuchi Kuniyoshi, Koike Yoshio

BRESLE SOMME AUTHIE : LONG TERM COASTAL SUBMERSION AND FLOOD MANAGEMENT PLAN ........................................ 1919

Caball Agnès, Schaunier Gaëlle, Morisseau Gregory, David Eric, Berthelier Emmanuelle

EXPLOREING ADAPTATION PATHWAYS IN TERMS OF FLOOD RISK MANAGEMENT AT A CITY SCALE – A CASE STUDY FOR SHANGHAI CITY ............................................................... 1923

Ke Qian, Haasnoot Marjolijn, Hoogvliet Marco

IMPLEMENTING NEW FLOOD PROTECTION STANDARDS: OBSTACLES TO ADAPTIVE MANAGEMENT AND HOW TO OVERCOME THESE .............................................................. 1929

Klijn Frans, Asselman Nathalie E.M., de Kruif Arno, Bloemen Pieter J.T.M., Haasnoot Marjolijn

FLOOD RESILIENCE IN THE CONTEXT OF SHIFTING PATTERNS OF RISK, COMPLEXITY AND GOVERNANCE: AN EXPLORATORY CASE STUDY ..................................................... 1936

Johnson Noel, McGuinness Martina

THE ANALYSIS OF FUTURE FLOOD RISK IN THE UK USING THE FUTURE FLOOD EXPLORER .......................................................................................................................... 1946

Sayers Paul, Horritt Matt, Penning-Rosselt Edmund, McKenzie Andrew, Thompson David

WILLINGNESS OF RESIDENTS TO INVEST IN FLOOD MITIGATION MEASURES AND TO PURCHASE FLOOD INSURANCE ........................................................................................................ 1955

Väisänen Sari, Lehtoranta Virpi, Parjanen Antti, Rytkönen Anne-Mari, Aaltonen Juha

PROPERTY FLOOD RESILIENCE DATABASE: AN INNOVATIVE RESPONSE FOR THE INSURANCE MARKET .................................................. 1963

Garvin Stephen, Hunter Katy, McNally Dermot, Barnett Douglas, Dakin Rob

SURFACE WATER FLOOD RISK AND MANAGEMENT STRATEGIES FOR LONDON: AN AGENT-BASED MODEL APPROACH ............................................................ 1969

Jenkins Katie, Surminski Swenja, Hall Jim, Crick Florence

FLOOD RISK MANAGEMENT OBJECTIVES AND ROMANIAN CATALOGUE OF POTENTIAL MEASURES FOR FLOOD PREVENTION, PROTECTION AND MITIGATION ........................................ 1979

Radulescu Daniela, Ion Miriel Bogdan, Dumitrache Ramona, Barba Cristian Eugen

FRENCH NATIONAL POLICY FOR FLOOD RISK MANAGEMENT ..................................................................................... 1986

Morel Mathieu, Basin Bérangère, Vullierme Emmanuel

DEVELOPING A NATIONAL PROGRAMME OF FLOOD RISK MANAGEMENT MEASURES: MOLDOVA .................................................. 1990

Ramsbottom David, Frank Enrico, Weisgerber Alain, Beros Marco
EU FLOODS DIRECTIVE IMPLEMENTATION IN AUSTRIA ................................................................. 2001
Neuhold Clemens

DANISH RISK MANAGEMENT PLANS OF THE EU FLOODS DIRECTIVE ................................. 2008
Jebens Martin, Sorensen Carlo, Piontkowitz Thorsten

LESSONS LEARNED FROM THE PREPARATION OF THE FLOOD RISK MANAGEMENT
PLANS ON THE SEINE BASIN AND PERSPECTIVES .......................................................... 2018
Dupray Sébastien Dr, Lavallart Caroline, Salles Elodie, Vignasse Isabelle

FLOOD RISK MANAGEMENT IN FLANDERS: FROM FLOOD RISK OBJECTIVES TO
APPROPRIATE MEASURES THROUGH STATE ASSESSMENT ........................................... 2026
Verbeke Sven, Devroede Neel

FLOOD RISK MANAGEMENT AND ‘FAIRNESS’: ASPIRATIONS AND REALITY ..................... 2032
Penning-Rowsell Edmund C., Priest Sally J., King Diana

DISTRIBUTING RESPONSIBILITIES FOR SAFETY FROM FLOODING ................................. 2039
Doorn Neelke

Author Index