

Index

A

Agricultural facilities, 82, 84–86
Alluvial fan, 119
Alluvial plain, 16, 23, 33, 34, 94, 102, 107
Aneyoshi, 65, 69, 76–78, 91
Anthropogenic activities, 11
Artificial constructions, 65, 70, 71, 91
Artificial landforms, 4
Asia Pacific region, 2

B

Back marsh, 41
Back swamp, 118, 119, 125
Backwash, 37, 44, 47, 60
Banked river, 65, 90
Basal gravel (BG), 93–95, 102, 107
Bay-head deltas, 37
Beach ridge, 41
Buried landform, 99, 100, 107–109

C

Coastal erosion, 3
Coastal geomorphology, 1, 12, 65, 66
 of Asia, 2
Coastal Plain, Vulnerability of, 2–5, 11, 12
 Ishinomaki, 4
 southern Miyagi Prefecture, 4
 Tsunami in, 5
Coastal plain
 land-use change along, 3
Coastal prism (CP), 93–95, 97, 102–109
Coastal sand dunes, 114
Coastlines, 2, 4–6
Coseismic subsidence, 15, 22
Crustal movements, 16, 21–23, 28, 31, 33, 34

D

Decontamination, 136, 154, 161
Delta, 116, 118, 119

Disaster risk, 3, 5, 9, 12
Disaster risk reduction, 11
Disaster vulnerability, 126–128
Dune, 47, 51, 55, 60

E

Earthquake
 2011 East Japan Earthquake, 4, 6
 2011 East Japan earthquake, 12
 Hanshin-Awaji earthquake, 2
 in East Japan in 2011, 1
 liquefaction caused by, 5
 Nepal earthquake of 2015, 2
 Sumatra-Andaman Islands earthquake, 2
 tsunami and, 4
Embankment, 65, 66, 70, 71, 74, 76, 82, 84, 90
Erosion, 65, 83–85, 88, 90, 91
Evacuation, 1–5, 8, 9

F

Floodplain, 65, 71–74, 76, 80, 82–84, 86, 88, 90
Flood-retarding buffer zone, 116
Fluvial and coastal landform, 2, 128, 129
Fluvial geomorphology, 65, 66
Former river courses, 65, 79–81, 88, 91

G

Geodetic record, 16, 22, 23, 34
Geomorphological effects, 69, 79, 88, 90
Geomorphologic land classification map, 4, 5, 9, 11
Geomorphology, 9, 11
 of Asia, 2
 of northeastern Japan, 12
 tsunami damage and, 1
GPS, 61
Great Ise Bay Typhoon, 10

H

- Habitation side of the floodplain, 65, 73, 74, 76, 82
- Hazard map, 4, 9
- Hei River, 65, 69–72, 90
- Historical earthquake, 95, 105
- Holocene, 41, 42, 114–116, 119
- Holocene crustal movement, 15, 26, 29
- Human dimension
 - for disaster mitigation, 11
- Human Dimension
 - of 2011 Tsunami, 5

I

- Incised valley, 41
- Incised-valley fill, 41, 94, 99, 100, 107–109
- Incrustation, 83, 86–90
- Inland liquefaction limits, 101, 105
- Inner bay mud, 107, 108
- Intertidal deposit, 26, 29, 32, 34
- Inundation area, 70, 71, 73, 74, 79, 81, 134, 137–139, 158
- Inundation distance, 38, 44, 51
- Inundation height, 38, 42, 49, 55
- Inundation processes, 65, 66, 69, 79, 88, 89, 91

K

- Kanto plain, 99, 109
- Kesenuma Okawa Plain, 30, 33

L

- Lagoon, 42, 44, 116, 119, 124, 125
- Landform, 1, 3–5, 9, 114, 115, 117, 119, 122, 126–129
 - environmental change process and, 10
 - micro-landform analysis, 2
 - tsunami and, 12
- Landform classification map, 18, 27, 30
- Landform combination types, 119
- Land-use change, 1, 11, 123, 124, 126, 128
- Land use pattern, 113, 123–125, 128
- Land use regulation, 141, 143, 147, 157
- Last Glacial Maximum, 41
- Last-glacial river profile (LGRP), 94, 103
- Leakage, 115
- Lifelines, 114, 126
- Liquefaction, 38, 114, 115, 119, 121, 122, 126–129
- Local community, 1–3, 5, 8–10
- Lowland, 65, 66, 69, 70, 73, 76, 90

M

- Marine Isotope Stage (MIS), 20, 39, 42
- Marine Terrace, 15–17, 19, 21, 22, 34

- Mesh map, 126, 128
- Micro-landform, 65, 66, 80, 83, 91
- Mihama, 97, 100, 105
- Mitigation, disaster mitigation, 1, 3, 10, 11
- Miyako City, 65, 69–72, 90
- Molluscan shells, 26, 27, 29, 31, 32, 34
- Monsoons, 2
- Monument (tsunami), 76–78

N

- Natori River, 65, 69, 79, 82, 84, 88, 91
- Natural disaster
 - anthropogenic factors for, 11
 - geographic conditions and, 12
 - in Asia, 1, 2
 - river basin evolution with, 10
- Natural levee, 41, 114, 119, 120, 123, 125
- Nuclear disaster, 136, 151, 154, 161

O

- Otsuchi town, 73, 74
- Overflow, 68, 70–73

P

- Paddy soil, 44, 49, 61
- Physical Dimension
 - of 2011 Tsunami, 5
- Pleistocene, 15–17, 21, 22, 33, 34
- Potential vulnerability, 126
- Preparatory process, 11
- Present river profile (PRP), 94, 103
- Prevention
 - disaster prevention, 11
 - flood prevention, 3
- Preventive measure, 12

R

- Radiocarbon dating, 23, 29, 30, 32–34
- Reclaimed land, 93, 94, 99, 102, 114, 119
- Reconstruction, 134, 136, 141–151, 153, 155–157, 160
- Reconstruction agency, 136, 148, 151
- Reconstruction measures, 141, 146
- Reconstruction plan, 143, 148, 156
- Rehabilitation process, 2, 3
- Relative sea-level (RSL), 23, 26, 28, 29, 31–34
- Residential relocation, 143, 147, 158–161
- Resilience, 128
- Ria coast, 21, 23, 34
- Rias, 37–39, 41, 44, 57, 60, 66, 69, 91
- Rikuzentakata Plain, 23, 27–29, 31, 33
- Risk communication, 9
- Risk reduction, 126, 128
- River-control projects, 116

River management project, 116
 River mouth, 97, 102–107
 River side floodplain, 71, 72, 82–84, 86, 89
 Run-up flow, 44, 51, 55
 Run-up height, 37–39, 42, 44, 55, 58, 59, 61

S

Sand boil, 100, 108
 Sand dunes, 114, 116, 119
 Sanriku coast, 15–17, 21–24, 33
 Seawalls, 65–69, 73, 80, 90, 145, 147, 157
 Sediment, 82, 90
 Sedimentation, 65, 88, 91
 Sediment core, 23, 30, 34
 Sendai Plain, 65, 69, 79, 90, 91
 Social Response, 6
 Societal Security, 11
 Special zones for reconstruction, 148, 149
 Strand plain, 37, 38, 41, 44, 51, 61
 Sustainability, 11

T

Taro, 68
 Tectonic plate, 16, 19
 Terrace, 37, 39, 41, 51, 61
 The 2011 off the Pacific coast of Tohoku
 Earthquake, 65, 66, 90
 Tide gauge, 16, 22, 34

Tsunami, 2
 distribution of, 4
 earthquake and, 4
 evacuation process after, 2
 geomorphology and, 1
 in Coastal Plain in 2011, 5, 11
 regions affected, 8
 Social Response to, 6
 in Japan, 4
 intrusion with earthquake, 2
 inundation by, 5
 Tsunami ascending, 66, 76, 77, 86
 Tsunami deposit, 37–39, 42, 44, 50, 53, 55, 60, 62
 Tsunami flow, 65–67, 70, 71, 76, 88, 90
 Tsunami inundation, 134, 137–139, 158
 Tsunami inundation process, 65, 66, 69, 79, 82, 88, 89
 Typhoons, 2, 3

U

Urayasu, 94, 102, 105

V

Valley bottom plain, 65, 69–71, 74
 Valley plain, 37, 41, 42, 44, 55, 61
 Vulnerability, 2, 3, 8