

漁村環境施設（上下水道）の被害と早期復旧

要約：今回の東日本大震災において、漁村の上下水道施設のうち、上水道施設の被害は比較的少なかったが、漁業集落排水施設と呼ばれる下水道施設、特に処理施設は甚大な被害を受けている。これは、下水は管路施設により自然流下で処理施設まで集水するため、漁村の場合、ほとんどの地域で処理施設が海岸部に設置されているためである。処理施設は土木構造物、建築構造物、機械設備、電気設備、外構施設で構成されているが、地震による被害より津波による被害が大きく、津波により施設全体が浸水した例が多く見られる。津波でドア・窓などが破壊され、建屋内に津波が押し寄せたことにより、機械・電気設備が浸水や破損・流出による被害を受けている。コスト的にも機械・電気設備の占める割合が多いため被害額が大きくなっている。管路施設の被害は比較的少なかったため、被災を免れたエリアの家屋からは下水が排水されており、現在、応急復旧等で対応している。今後、漁村の復興計画に合わせて本復旧を行うこととなるが、必要に応じて施設規模、処理施設の設置位置、整備手法(分散処理化)等の見直しを行うことが求められる。

キーワード：津波、地震、被害、下水道施設、処理施設、漁村

Damages of water supply systems and sewerage systems in fishing villages and early restoration

Abstract: The recent earthquake and tsunami that hit northeastern Japan caused serious damage to the infrastructure in the coastal area. In fishing villages, water supply systems were relatively low damaged, however sewage system, especially sewage treatment plants were seriously damaged. The reason is that the drains were collected by sewer systems and flew into the treatment plants as gravity flow, and as a result of it, most of the damaged sewage treatment plants were located at near the coast. Generally a treatment plant is composed of civil structures, buildings, mechanical facilities, electrical facilities and outdoor facilities, and this time these facilities were more severely damaged by the tsunami than by the earthquake. Through the site investigations authors carried out, many facilities were found to be totally covered with water. Tsunami waves hit and broke the doors and the windows first and then flew into the inside of facilities crushing the mechanical and electrical apparatuses. The price of mechanical and electrical facilities was expensive as compared to others and that increased the total damage cost of facilities. The sewer system damage was relatively low as compared to the treatment plants. Because of this reason, some sewer systems are currently in use collecting drains discharged from undamaged houses. For these systems emergency restoration works are applied. Full recovery works for damaged sewage system in fishing villages will be carried out according to the overall recovery plans for fishing villages to be established by the local municipalities. Review of facility scale, location and development procedure will be required as needed.

Keywords: tsunami, earthquake, damage, sewage system, treatment plant, fishing village