



ECOMAWARU

ECO-sustainable MAnagement of WAter and wastewater in RUral communities

D7.1 – A7.1

Technical report on the draft proposal to be included in the Municipal Building Code

31st October 2013





**Technical Report on the draft proposal to be included in the
Municipal Building Code
ACTION 7.1: Elaboration of set of rules**

Aciofn 7.1 aims at developing a data base collecting Italian and European regulations about water and wastewater management. This database has been compiled in order to support the definition of the set of rules to be included in the Municipal Building Code.

This report illustrates the proposal regarding the use of phytodepuration technique with micro algae to be included in the Varese Ligure Municipal Building Code. In particular, a general description of the proposal is presented together with a discussion of the potential areas of employment. The draft proposal that will be discussed during a session of the municipal council is attached in Italian at this report.

This action has been implemented by Municipality of Varese Ligure with the technical support of DICCA (Department of Civil, Chemical and Environmental Engineering).

GREEN TECHNIQUE IN VARESE LIGURE MUNICIPALITY

In order to support the definition of the set of rules to be included in the Municipal Building Code, a legislative database regarding the water (storm and waste water) related issues has been firstly compiled.

The legislative database regarding the water (storm and waste water) related issues has been compiled according to the following steps:

1. Collection of regulations (at European, national and regional level), decisions of the courts and sector jurisprudence (both at EC and national levels);
2. Review of communitarian and local regulation experiences;
3. Critical analysis of issues arising from the management so as to contribute towards the definition of new set of rules to be included in the Municipal Building Code.

As for the data base collecting Italian and European regulations about water and wastewater management, it has been organized in three section (European, National and Regional Legislation) and for each section the following fields have been compiled:

- European Legislation : Entry into force (Year), Reference CODE, Act, Amending act, Subject, Brief description of content, Relevant deadlines;
- National Legislation: Reference CODE, Act, In compliance with, Subject, Brief description of content, Relevant deadlines
- Regional Legislation: Region, Entry into force (Year), Reference CODE, Act, In compliance with, Subject, Brief description of content, Relevant topics

This rules collection has to be considered in the draft proposal of the Building Code. The draft proposal that will be discussed during a session of the municipal council is focused on the waste water effluent from the houses/settlements dotted around the territory of the Municipality of Varese Ligure.

According to the laws (implemented in the legislative database at the three different scales) the waste water can be discharged into the sewer systems, the receiving water body and the soil. The discharge in public sewer is required by law when the distance from the buildings/settlements to the sewer is less than 300 m and the sewer is installed at a height lower than 20 m with respect to the ground of the buildings/settlements.

According to the laws, the waste water can be discharged into the receiving water body and soil in the following case respectively:

- Civil settlement characterized by discharge effluent lower than 500 PE (Population Equivalent) can be treated with Imhoff tank suitably sized and then discharged into the receiving water bodies;
- Civil settlement characterized by discharge effluent lower than 50 PE (Population Equivalent) can be treated with Imhoff tank suitably sized and then discharged into the soil.

Furthermore, as for the discharges into the stream/rivers as receiving water bodies, it has to be noticed that D.Lgs 152/06 sanctions that the natural flow should not be equal to zero beyond 120 days per year otherwise the discharges have to be refined with a tertiary treatment (as phytodepuration for instance with macrophytes or micro-algae). In the Regional Council Deliberation DGR 1705/03 a list of the rivers that satisfy this condition



is reported, in the other cases it is necessary to evaluate the number of low flows days. As for the Municipality of Varese Ligure the only river that is reported in the list of the DGR 1705/03 is the Vara river, even for the two main streams Crovana and Stora the number of low flow days has to be verified.

A specific remark has to be discussed for the discharges from the agricultural or zootechnical activities (indicated as 'Classe D' in the Regional Law L.R.43/1995). The final disposal of this typology of waste water can be either:

- River/Surface water bodies: the quality of waste water effluent standard does not have to exceed the quality standard for direct discharging into the receiving water bodies (Annex 5 – Italian Decree by Law 152/06 according to the EC Dir. 91/271);
- Soil: the load has to be lower than 40 ql/ha of cattle (or equivalent)

As for the Municipality of Varese Ligure, the zootechnical activities are mainly located in Scurtabò and Caranza hamlets. Nowadays the size of cattle farming is mainly equal to 20/30 heads of cattle, therefore the wastewater resulting from such activities is discharged directly into the soil.



DRAFT PROPOSAL (IN ITALIAN)

CAPO X: PRESCRIZIONI IGIENICO — EDILIZIE

Art. XX: Disciplina delle acque reflue in aree non servite da pubblica fognatura.

Per insediamenti ed installazioni che producono acque reflue domestiche o ad esse assimilabili, inferiori a 50 A.E., si suggerisce, ove la dislocazione sul territorio lo consenta, il convogliamento dei reflui verso un unico impianto di trattamento ai fini di minimizzare i costi di progettazione e realizzazione dell'impianto stesso nonché di massimizzare i rendimenti di depurazione e di conseguenza il livello di protezione ambientale.

Per insediamenti ed installazioni che producono acque reflue domestiche o ad esse assimilabili, inferiori a 100 A.E., si suggerisce ove la dislocazione sul territorio lo consenta, il convogliamento dei reflui verso un unico impianto di trattamento ai fini di minimizzare i costi di progettazione e realizzazione dell'impianto stesso nonché di massimizzare i rendimenti di depurazione e di conseguenza il livello di protezione ambientale. In tal caso si suggerisce inoltre la realizzazione di un impianto dotato di un trattamento primario (tipo Imoff) e di un trattamento secondario (tipo fitodepurazione a macrofite).

Per aziende zootecniche ovvero consorzi che debbano smaltire un carico superiore a 40 qI di peso vivo di bestiame per ettaro si suggerisce la realizzazione di un impianto di depurazione dotato di trattamento terziario (tipo fitodepurazione a microalghe)

Ai fini della progettazione e della gestione di idonei sistemi di trattamento di fitodepurazione si faccia riferimento al manuale tecnico per la progettazione di sistemi di fitodepurazione a macrofite e microalghe redatto nell'ambito del progetto LIFE+ ECOMAWARU.

Le disposizioni contenute nel presente articolo devono essere conformi a quanto contenuto nella legge D.Lgs. 152/06 (norme per la tutela delle acque dall'inquinamento) e successive modificazioni, ed a quanto disposto dalla L.R. numero 43/1995 e dalle Norme di attuazione del Piano di Tutela delle Acque (approvato con D.G.R. 32/2009) sulla disciplina degli scarichi nonché sulle misure per la tutela qualitativa della risorsa idrica.