



UNIVERSITÀ
DEGLI STUDI
DI UDINE
HIC SUNT FUTURA

CANTIERE
FRIULI



LIFE19
ENV/IT/000223

PHYTOR

Long term PHYtomanagement at the contaminated industrial site of TORviscosa

Comune di Torviscosa

Regione Friuli Venezia Giulia

COSEF - Consorzio di Sviluppo Economico per l'Area del Friuli

Comune di Narni (TR)

Copernico srl

Università di Udine

28/04/2024

Luca Marchiol DI4A UNIUD

Siti contaminati

Siti di interesse nazionale (SIN)

Anagrafe dei siti oggetto di
procedimento di bonifica

Criteri di priorità d'intervento

Caratterizzazione ambientale

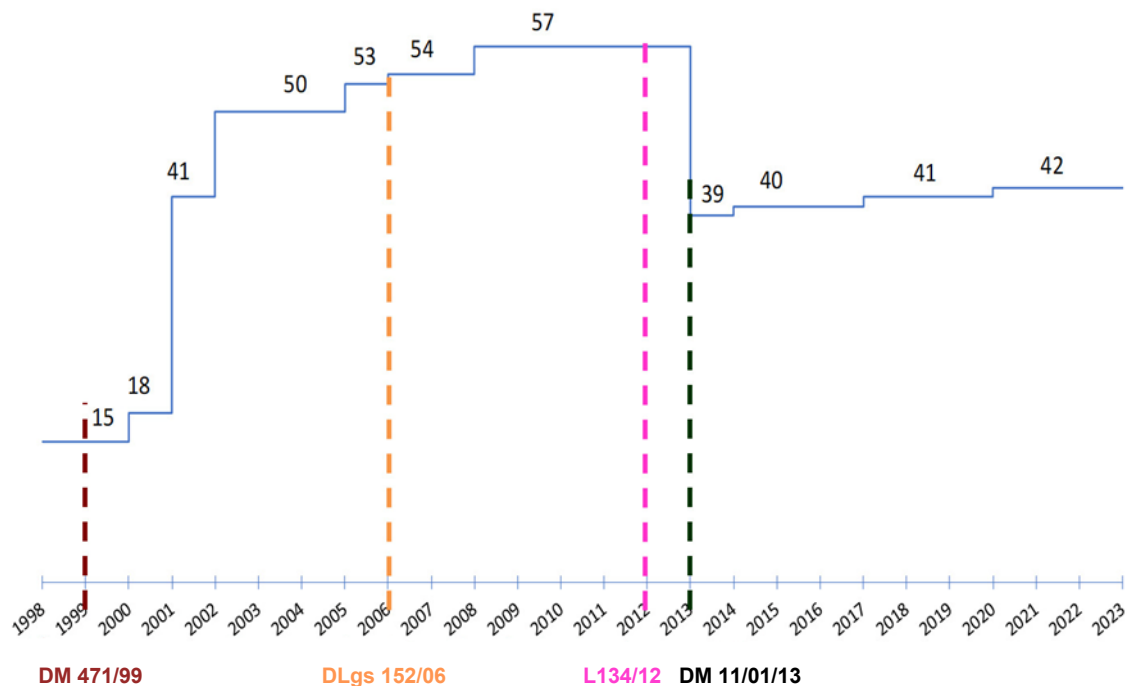
Monitoraggio delle matrici aeriformi

Tecnologie di bonifica

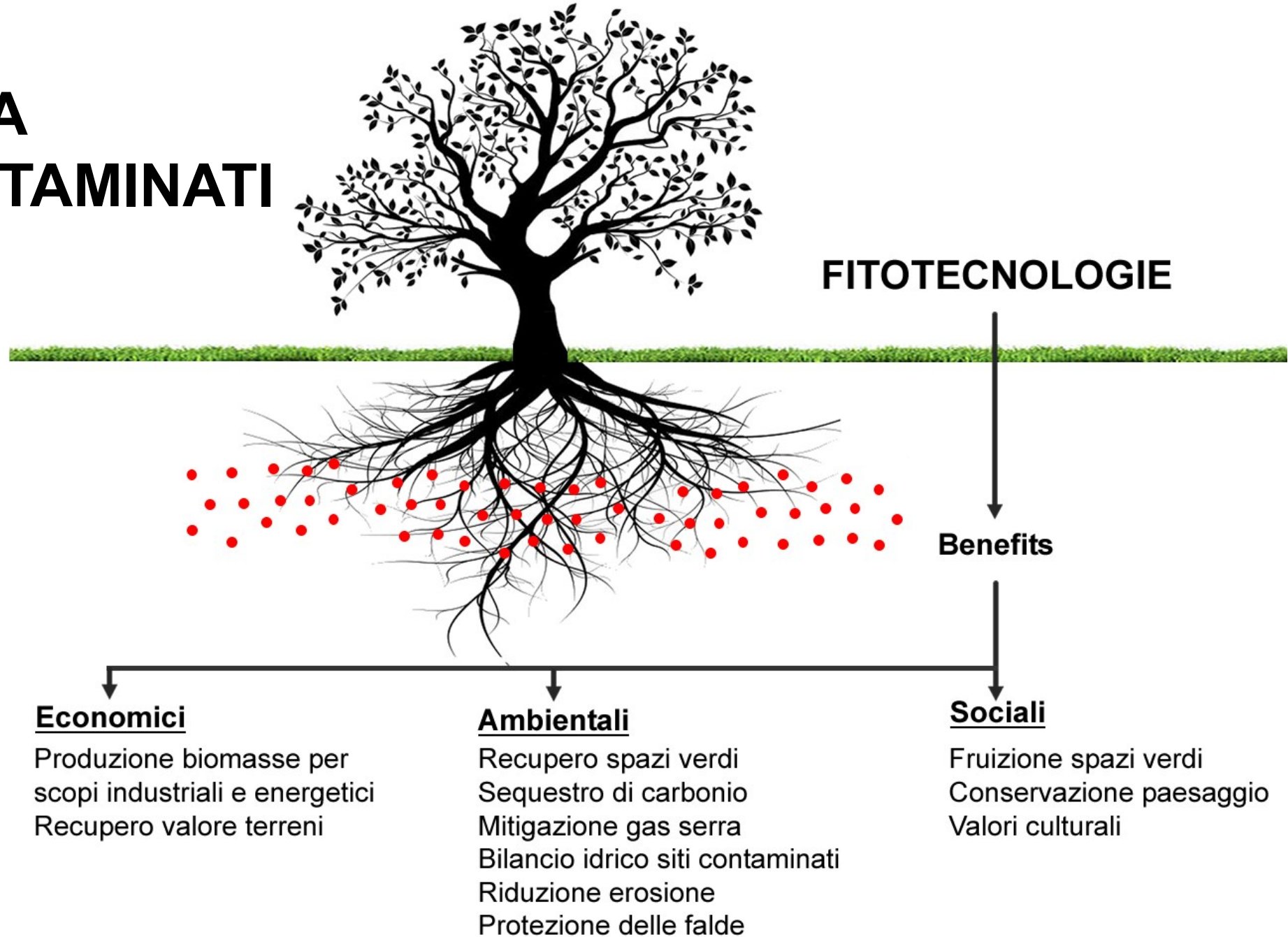
Analisi di rischio

Siti di interesse nazionale

I siti d'interesse nazionale, ai fini della bonifica, sono individuabili in relazione alle caratteristiche del sito, alle quantità e pericolosità degli inquinanti presenti, al rilievo dell'impatto sull'ambiente circostante in termini di rischio sanitario ed ecologico, nonché di pregiudizio per i beni culturali ed ambientali.



BONIFICA SITI CONTAMINATI



6/06/ 2005



**SI PUÒ PARLARE PROPRIAMENTE DI "FITORISANAMENTO"
QUANDO SI BONIFICA IL SUOLO SFRUTTANDO QUALI ALLEATI?**

SCARTI ALIMENTARI

UCCELLI MIGRATORI

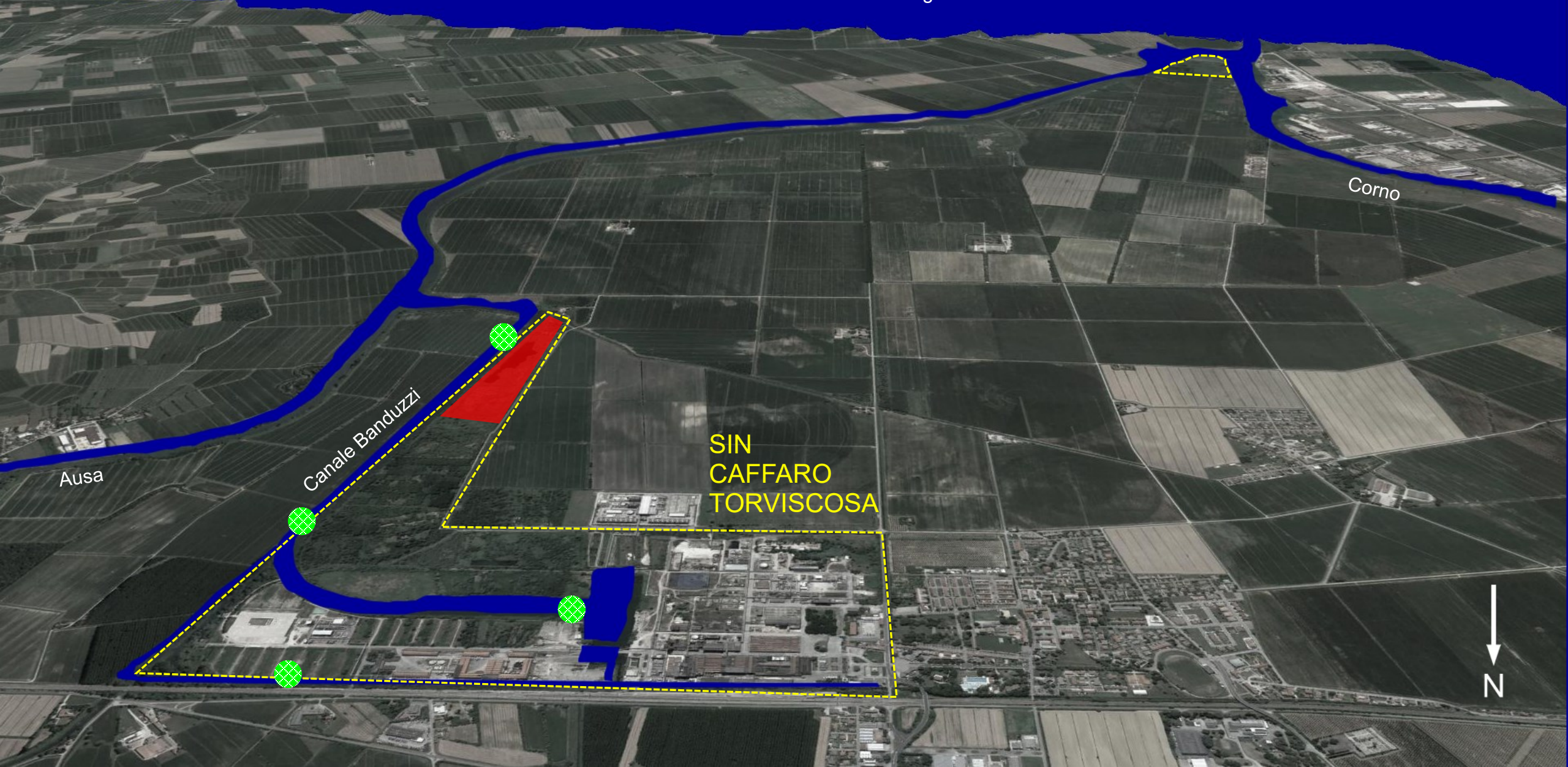
ACQUE DI SCARICO

PIANTE



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Laguna Grado e Marano



Ausa

Canale Banduzzi

Corno

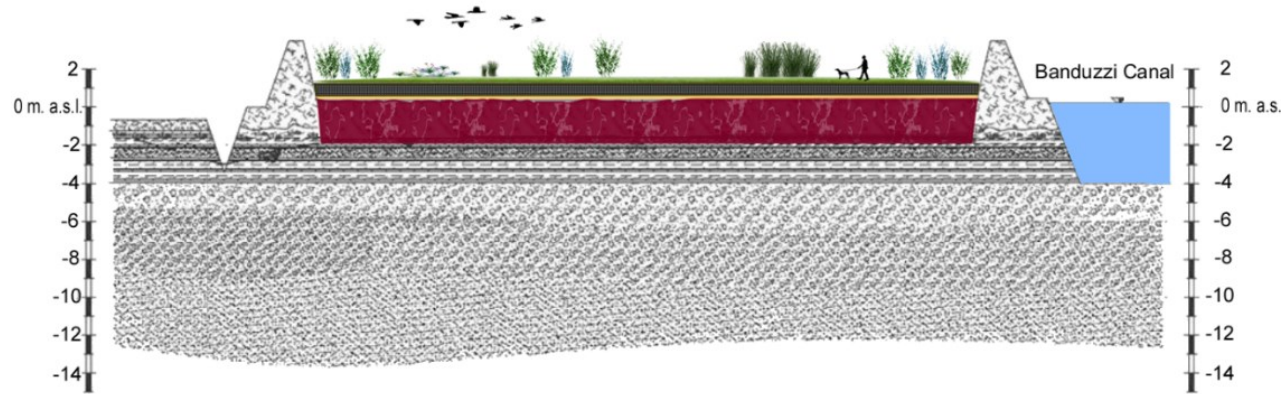
SIN
CAFFARO
TORVISCOSA



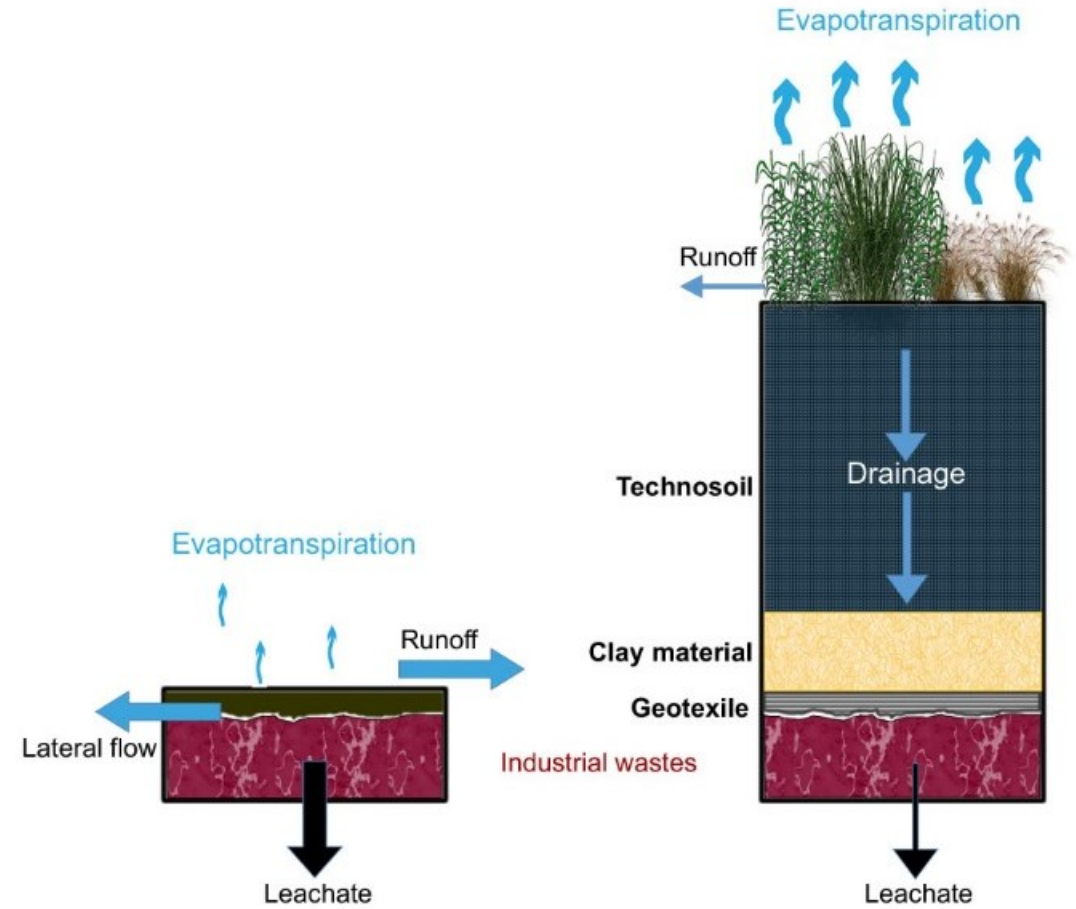


PHYTOCAPPING OF CDFs

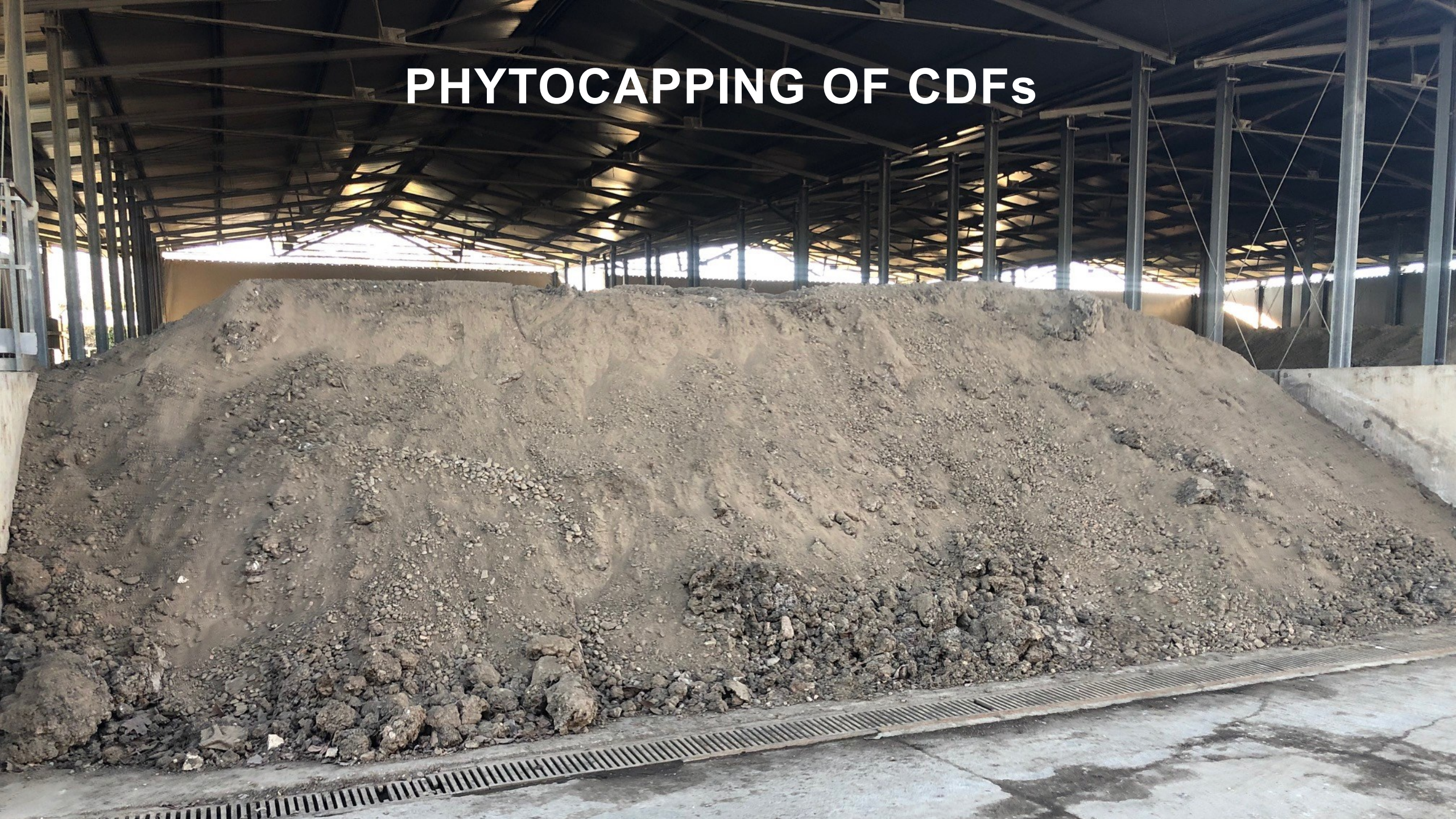
CURRENT



LIFE PHYTOR

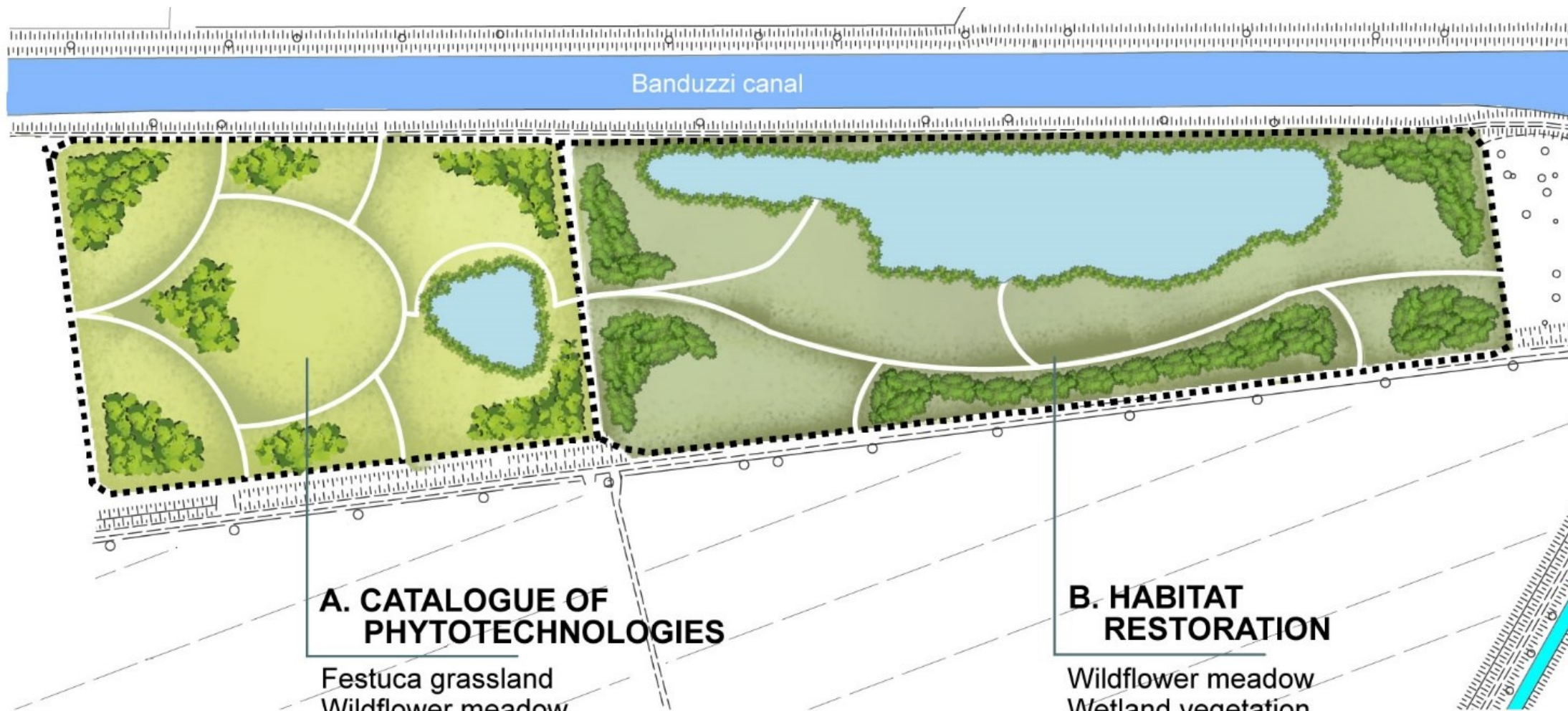


PHYTOCAPPING OF CDFs





MASTERPLAN



A. CATALOGUE OF PHYTOTECHNOLOGIES

- Festuca grassland
- Wildflower meadow
- Wetland vegetation
- Wild shrubs
- Fast growing perennials

B. HABITAT RESTORATION

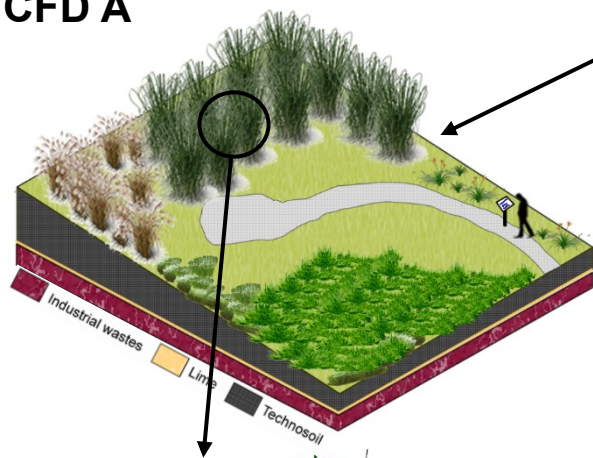
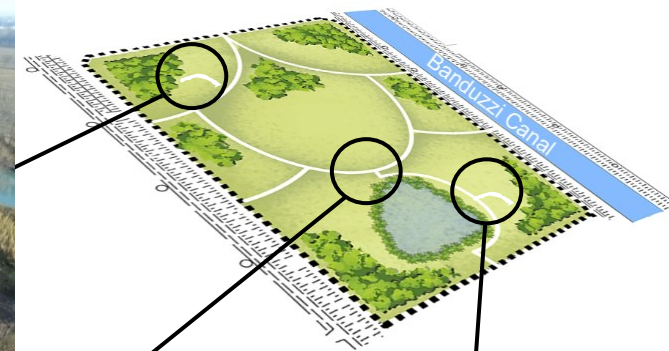
- Wildflower meadow
- Wetland vegetation
- Scrub



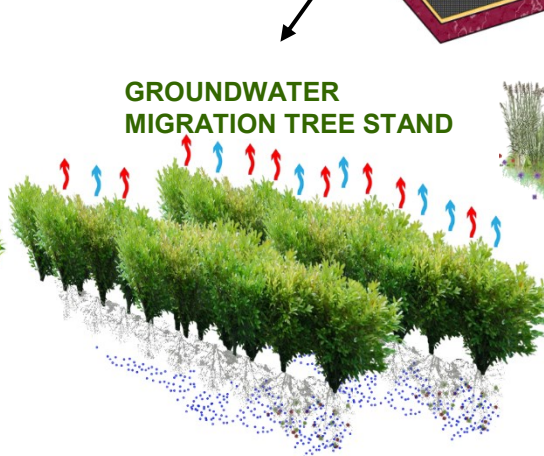
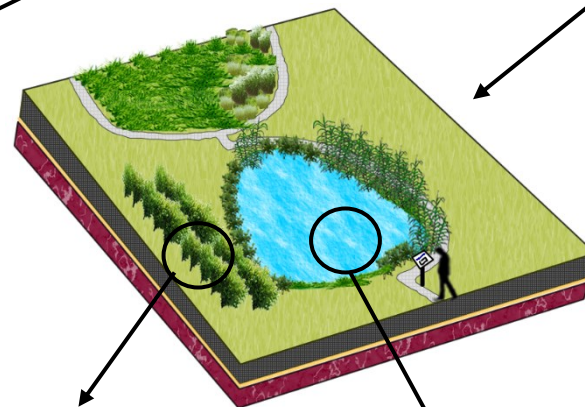
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CATALOGUE OF PHYTOTECHNOLOGIES

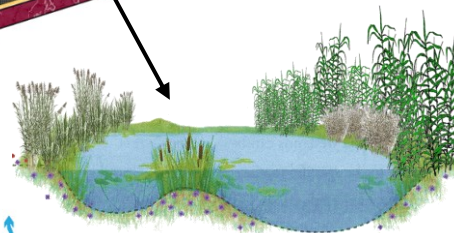
Exhibition of full scale models of phytomanagement at CFD A



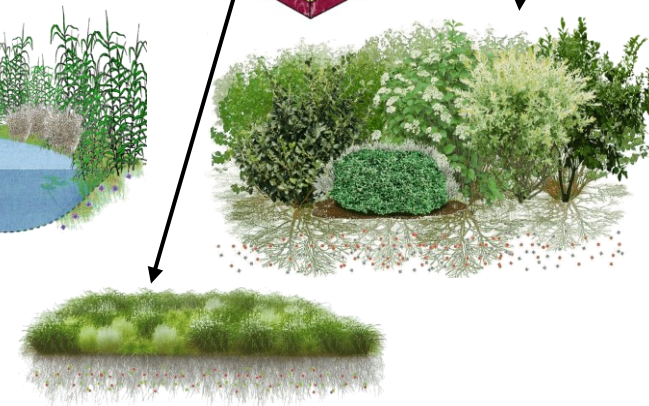
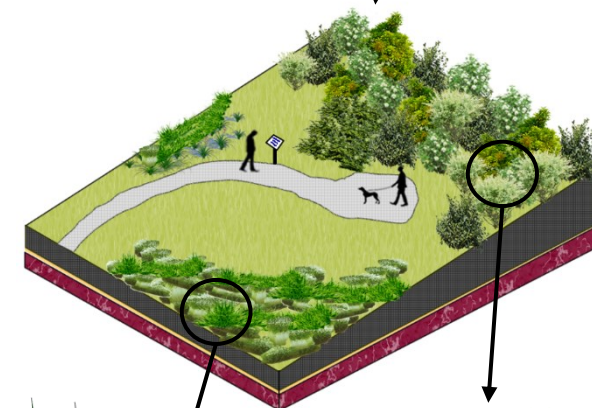
RHIZODEGRADATION AND BIOMASS PRODUCTION



GROUNDWATER MIGRATION TREE STAND



SURFACE-FLOW CONSTRUCTED WETLAND

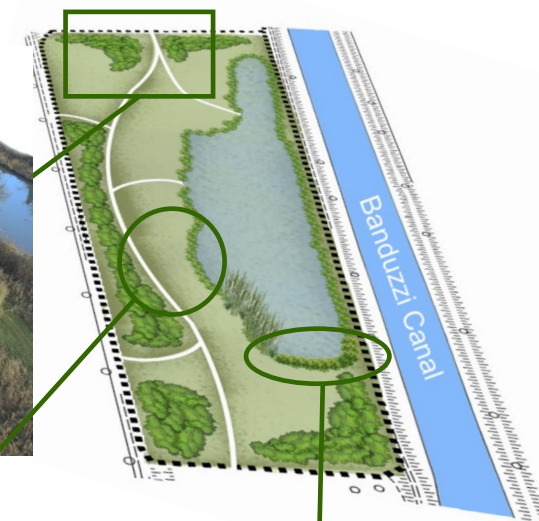


PHYTOSTABILIZATION



HABITAT RESTORATION

Ecological restoration of CDF B: establishment of dry meadows and scrub areas according to the principles of the SER



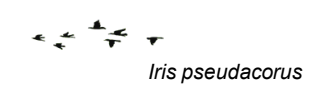
SCRUB HABITAT

Cornus sanguinea, Ligustrum vulgare, Salix eleagnos, Prunus spinosa, Rosa canina, Sambucus nigra

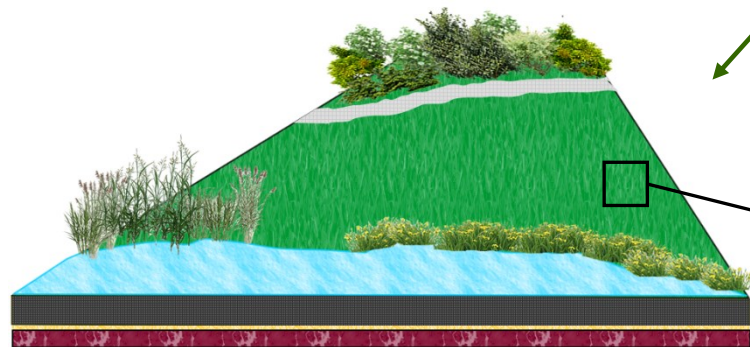


WETLAND HABITAT

Phragmites australis



Iris pseudacorus



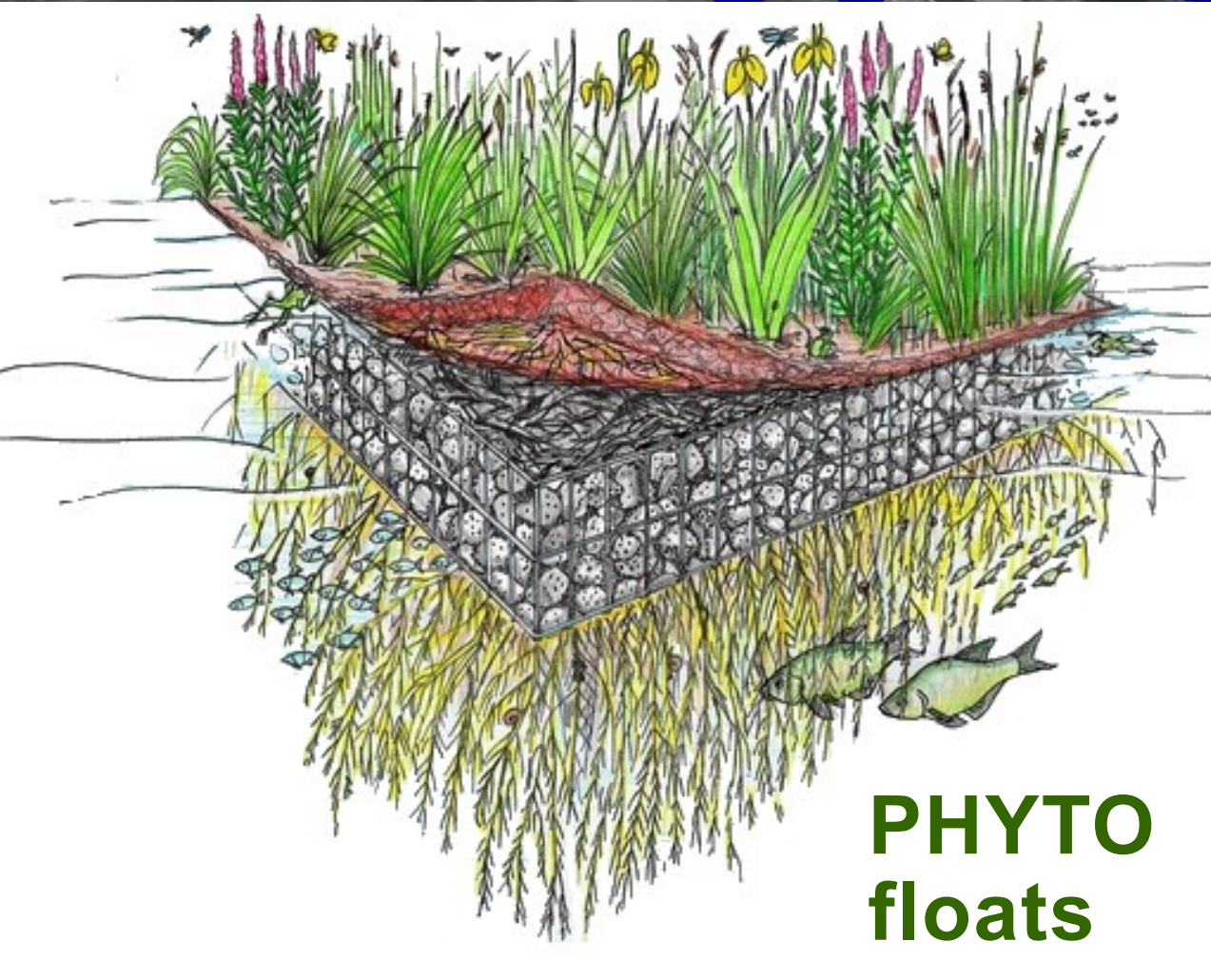
WILDFLOWER MEADOW HABITAT

Anthyllis vulneraria, Bupthalmum salicifolium, Dianthus carthusianorum, Euphorbia cyparissias, Galium verum, Helianthemum nummularium, Hieracium pilosella, Hypochaeris radicata, Petrorhagia saxifraga, Salvia pratensis, Scabiosa triandra, Anthoxanthum odoratum, Bromopsis erecta, Festuca rubra

Industrial wastes Lime Technosoil



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COMUNE DI TORVISCOSA
Roberto Fasan



REGIONE AUTONOMA
FRIULI VENEZIA GIULIA

REGIONE FRIULI VENEZIA GIULIA
Flavio Gabrielcig



COSEF
Renzo Marinig



COMUNE DI NARNI (TR)
Francesco de Rebotti



COPERNICO srl
Adriano Biasiolo



UNIVERSITÀ DI UDINE
Roberto Pinton

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FRIULI**

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[Ministero dell'Ambiente e della Sicurezza Energetica \(mite.gov.it\)](http://mite.gov.it)

www.isprambiente.gov.it/it/attivita/suolo-e-territorio/siti-contaminati/siti-di-interesse-nazionale-sin

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