

Figure 1. The HOMBRE Zero Brownfield Framework: the administrative land management cycle (outer donut), providing land management continuity throughout the land use cycle (inner donut).

Table 1 Main categories of Early indicators for BF origination and prevention

<b>Economic indicators</b>	<b>Social indicators</b>	<b>Environmental indicators</b>
1. Type and flexibility of economic land use	1. Occupancy rate housing, housing profile	1. Level of pollution of soil, water, air
2. Economic revenues (jobs, tax revenues, return on private investment)	2. Population wealth, education level, available services	2. Green areas density
3. Transportation infrastructure status and investments	3. Crime and social cohesion	3. Ecology
4. Production equipment status and investments	4. Human health and safety	4. Hindrances (noise, smell, erosion, litter)
5. Land ownership and management	5. Site location, image, (what is offered versus what is required/ permitted by surroundings)	

Table 2. Selection of economic indicators from the HOMBRE list of early warning indicators

CATEGORY	ISSUES INDICATORS MIGHT NEED TO CONSIDER	SUGGESTED INDICATORS	Effect on short/long term <10 years >	Scale Local/Regional/ National/Global	Source for data/info
deindustrialisation or restructuring of the economic activities	Land use	the change of the percentages of areas under industrial land use	Short term	Local and National	EUROSTAT
		floor spaces for industrial, retail and office use	Short term	Local	Local/national statistics For example: <a href="http://www.communities.gov.uk/planningandbuilding/planningbuilding/planningstatistics/previoudlydevelopedbrownfield/">http://www.communities.gov.uk/planningandbuilding/planningbuilding/planningstatistics/previoudlydevelopedbrownfield/</a>
	Composition of employment	percentages of employment in industrial sector and service sector within municipalities	Short term and long term	Local and national	EUROSTAT Local/national statistics
	Composition of GDP	percentages of GDP in industrial sector and service sector within municipalities	Short term and long term	Local and national	EUROSTAT national statistics
	Employment	long term unemployment	Long term	Local national	EUROSTAT Local/national statistics
	Real estate market	property price	Short term	Local	Local/national statistics Online directories Property assessment cooperation
transportation	Accessibility, mobility, operational efficiency	average time from facility to major highway network/train facility	Short term/ Long term	Local	Local infrastructure plans
		bridge weight limits	Short term/ Long term	Local	Local infrastructure plans
		lost time due to congestion	Short term/ Long term	Local	Local infrastructure plans
		volume/capacity ratio	Short term/ Long term	Local	Local infrastructure plans
	Safety	Number of accidents	Short term/ Long term	Local	Local statistics
	System Preservation	Percent of roadway/bridge system below standard condition	Long term	Local	Local infrastructure plans

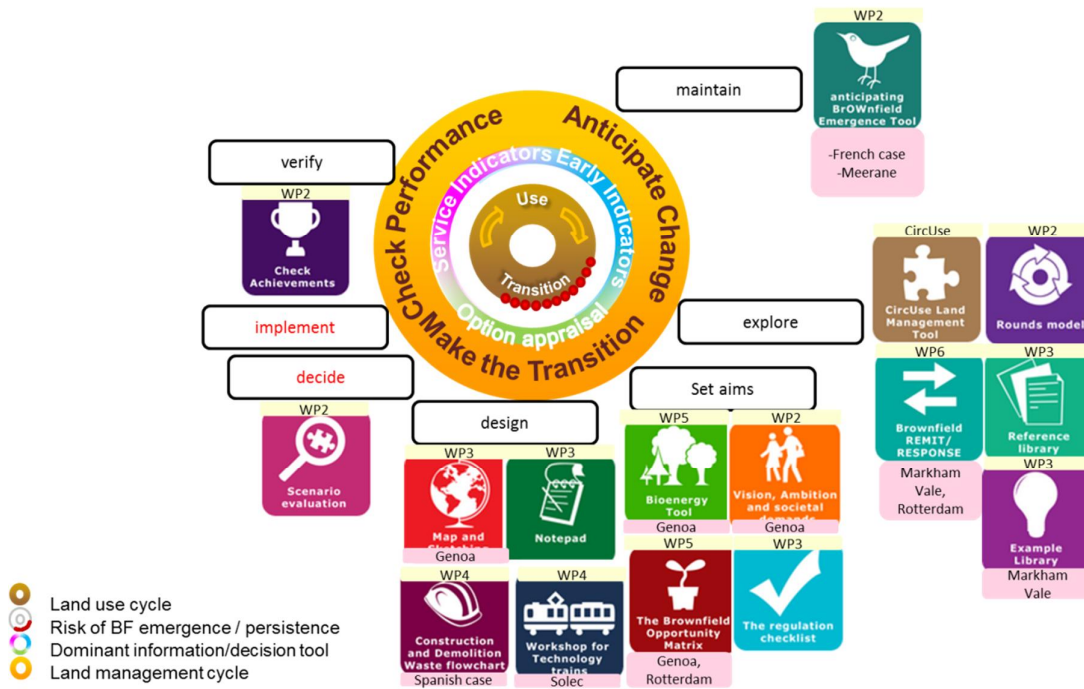


Figure 2. Items in the BFN along the land cycle and at which cases tested.

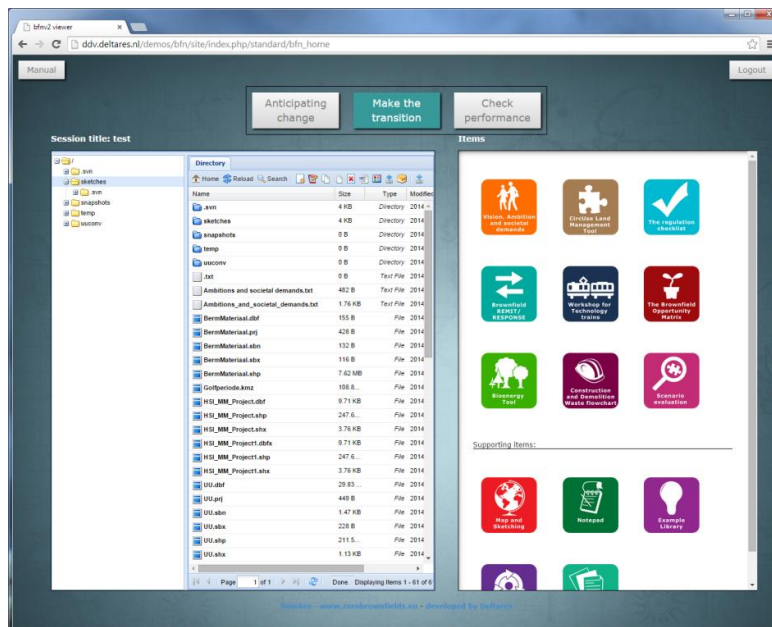
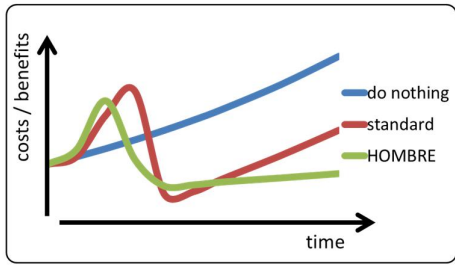


Figure 3. Set up of the BFN



INPUT (supply)	TECHNOLOGY TRAIN	OUTPUT (demand)
Available resources (local / regional / global)	harvest → process → distribute	Required goods and services (local / regional / global)
Current physical environmental characteristics (quality / quantity)	design → built → operate	Required physical environmental characteristics
	function of time, ambition, legislation, robustness, ...	

Figure 4. Concept of Technology Trains.

Table 3. Interventions and coupled services for soft re-use.

Services	Interventions
Soil Improvement	Soil Management
Water Resource Improvement	Water Management
Provision of Green Infrastructure	Implementing Green Infrastructure
Risk Mitigation of Contaminated Soil and Groundwater	Gentle Remediation Options
Mitigation of Human Induced Climate Change (global warming)	Other Remediation Options
Socio-Economic Benefits	Renewables (energy, materials, biomass)
	Soil Management

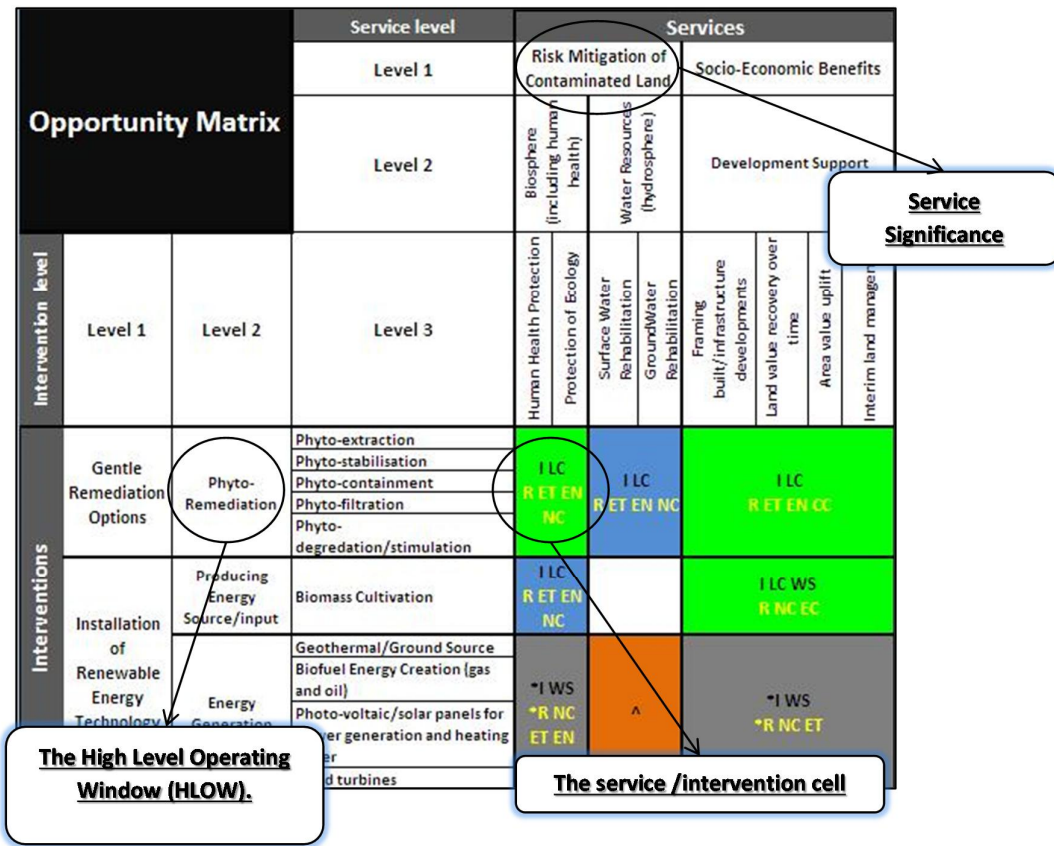


Figure 4. Small fragment of the Brownfield Opportunity Matrix with soft re-use services on the horizontal axis and interventions on the vertical axis

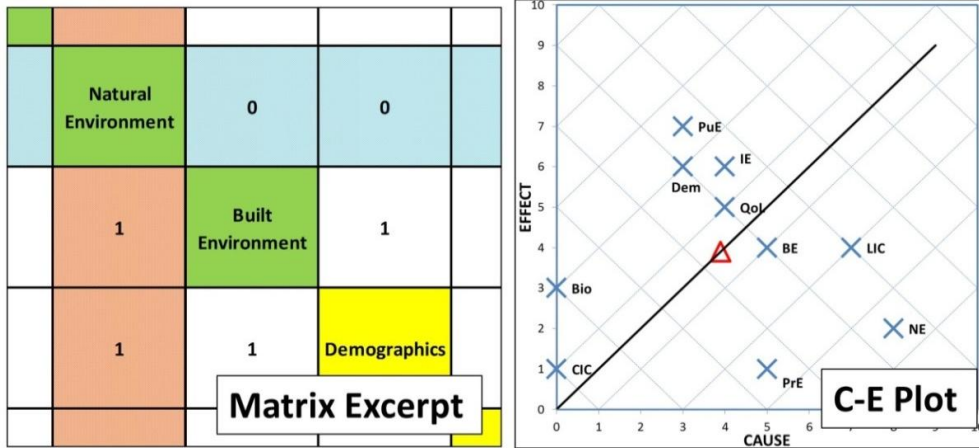


Figure 5 An excerpt from a completed Interaction Matrix (left) and Cause-Effect plot (right)

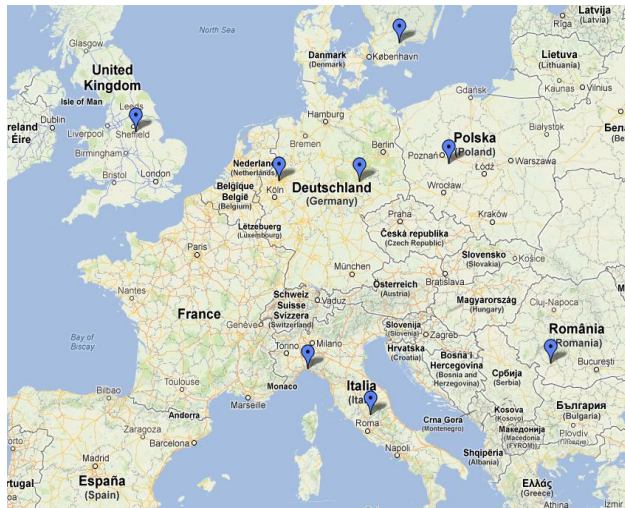


Figure 6. Map of HOMBRE case studies location

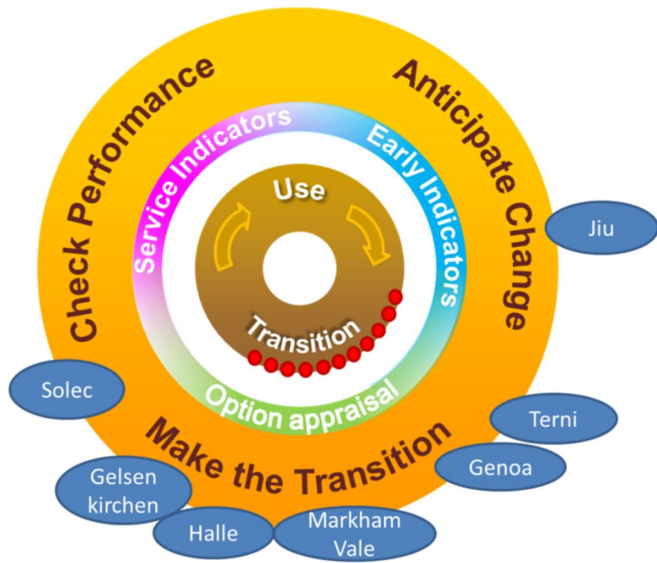


Figure 7. The position of the HOMBRE cases in the HOMBRE Zero Brownfield Framework



Figure 8 The HOMBRE logo

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**Holistic Management of Brownfield Regeneration**

At the heart of HOMBRE is the ambition to create a paradigm shift to 'Zero Brownfields' where Brownfields become areas of opportunity that deliver useful services for society, instead of derelict areas that are considered useless. This ambition will be met by looking at how synergies between different types of services might leverage change where none was possible before.

Each Brownfield has its own potential for delivering useful combinations of services and hence new opportunities. For example, synergies between services like development + water improvement + renewable energy. An intelligent and holistic suite of technologies, management measures and land use is the key that can unlock this potential. HOMBRE is centred on the identification of synergies and the design of the approaches needed to achieve them.

An overarching assessment of opportunities and services lets stakeholder(s) choose how these are taken into account for the possible re-uses. The HOMBRE shift in thinking relates not only to the redevelopment itself, but also to gaining better understanding in early recognition and prevention of land that might become a Brownfield in the future, and how to monitor this as part of the land use cycle.

A visual decision support tool the Brownfield Navigator is being developed by HOMBRE to guide stakeholders showing synergies between services and the opportunities these create at the different stages in the land use cycle. The goal is to enable better communication between stakeholders about opportunities and inspire them to find better solutions with higher benefit. HOMBRE will illustrate what might be possible with a number of case studies where implementing suites of 'hard' and 'soft' technologies, has facilitated cost-effective, timely, and sustainable Brownfield regeneration along with broader services to the environment, economy and society.

**News:**

**HOMBRE Final Conference (14-16th October 2014 in Frankfurt am Main, Germany)**

was held as a joint event with the CABERNET network and the EU FP7 projects "GLOCOM", "Greenland" and TIMBRE. More information on the [conference programme](#) and the [presentations](#) is available [here](#).

Quick Links

HOMBRE final brochure

Hombre Brochure

Project Overview

Use the Brownfield Navigator

Opportunity Matrix

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Figure 7 Homepage of the HOMBRE website