A History of the U.S.-German Bilateral Working Group

1990-2012

(Twenty-two years in Thiry Minutes)

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Outline

- Phases 1&2 – Evaluation of Remediation Technologies and QA
- Phase 3 – Redevelopment of Potentially Contaminated Sites
  - SMARTe
- Phase 4 – Sustainable Land Revitalization
  - DE.SMARTe (CRADA)
  - Sustainable Land Re-Use Tools
- New CRADA

History of Collaboration between US and Germany

A phased approach……

- **Workgroup Began in 1990**
- **Initial Focus on Cleanup Technologies**
- **In 2000 -- Focus on Redeveloping Potentially Contaminated Sites**
- **In 2006– Focus on Sustainable Land Revitalization**

Ultimate Goal …….


St. Louis, Missouri


Stuttgart

Working together toward common goals and a shared vision

Phase 1 (1990-1995) Program Goal and Objective

During Phase 1 and Phase 2, the **goals** of the Bilateral Agreement included:

1) **Facilitate an understanding of each country's approach to the remediation of contaminated sites**
2) **Evaluate innovative remedial technologies according to the standards of both countries**
3) **Facilitate international technology exchange.**

During Phase 1, **ten technologies** at sites in the U.S. and Germany were evaluated. U.S. demonstrations corresponded to EPA's Superfund Innovative Technology Evaluation (SITE) demonstrations; those occurring in Germany correspond to full-scale site remediation activities.

Technologies demonstrated during Phase 1 include **soil washing, thermal desorption, biological treatment, in-situ radio frequency heating, vacuum distillation, catalytic oxidation, UV-oxidation, pyrolysis, and in-situ ventilation.**

Phase 2 (1995-2000) Program Goal and Objective

Under Phase 2 of the Bilateral Agreement, **SITE Program quality management protocols were reviewed and used to develop a German equivalent, the German Standard Procedure for the Evaluation of Remedial Technologies (the DETAD).** Both the U.S. and German quality management protocols were then applied to **five technology evaluations in the U.S. and five technology evaluations in Germany.**

Technologies demonstrated during Phase 2 include **enhanced soil vapor extraction, bioremediation, reactive barriers, electroheating, surfactant-enhanced extraction, soil stabilization, and catalytic combustion.**

Phase 3 (2000-2005) Program Goal and Objectives

Develop Tools and Techniques to Facilitate Revitilization Of Potentially Contaminated Sites

OBJECTIVES:

- **Facilitate Equitable Land Use**
- **Facilitate Faster Redevelopment of Sites**
- **Allow Greater Independence from Public Money**
- **Enhance Benefits to Society**

Phase 3 Approach

Step 1: Baseline workshops to **identify obstacles** to revitalization

Step 2: Feasibility study to **determine which obstacles** the U.S.-German Bilateral Working Group could address

Step 3: Research and develop **tools and techniques to overcome obstacles** to revitalization

Step 4: **Beta-test tools and techniques** to determine if they facilitate revitalization

SHARE IDEAS AND EXPERIENCES

Phase 3 Tools to Overcome Obstacles

- **Documentation of 7 International Practitioners-workshops**
- **Sustainable Management Approaches and Revitalization Tools – electronic (SMART-e) [U.S.EPA] available at smarte.org**
- **Start-Up-Brachfläche – Arbeitshilfe (Germany) available at www.vegasinfo.de/startup/**
- **Report: Vapor Intrusion Issues at Brownfields Sites (ITRC)**
- **GEPARD – Bilingual Business Plan - Outlines an Interactive Calculation Tools**

Phase 3: Workshop Summary

CD Ordering information at smarte.org

Workshop	Location
Economic Tools *11-12 November 2002*	**Charlotte, North Carolina**
Project Management and Market Strategies *7-8 May 2002*	**Saarbrücken, Germany**
Risk Assessment/Communication Tools *23-24 October 2003*	**Portland, Oregon**
Social Aspects *17-18 June 2004*	**Leipzig, Germany**
Sustainable Reuse *16-17 September 2004*	**St. Louis, Missouri**
Summary Conferences *31 Oct-1 Nov 2005; 18-19 April 2005*	**Berlin, Germany** **Denver, Colorado**

SMARTe Overview

Sustainable Management Approaches and Revitalization Tools – electronic

Overcome Revitalization Obstacles

Content: Information, Resources, Case Studies, Links; Checklists; Identify questions to ask

Analysis Tools: Technical and Non-Technical

Search Engine: Find Specific Info

My Project: Evaluate Reuse Options

SMARTe is **freely** available at: **smarte.org**


Phase 4
Sustainable Land Revitalization

Phase 4 (2006-2012) Program Goal and Objectives

Develop Tools and Techniques to Facilitate Sustainable Land Revitalization

OBJECTIVES:

- **Facilitate Environmentally, Socially, and Economically Viable Land Use**
- **Facilitate Transfer of Information Both Nationally and Internationally**
- **Allow Greater Independence from Public Grants**
- **Enhance Benefits to Society and the Environment**

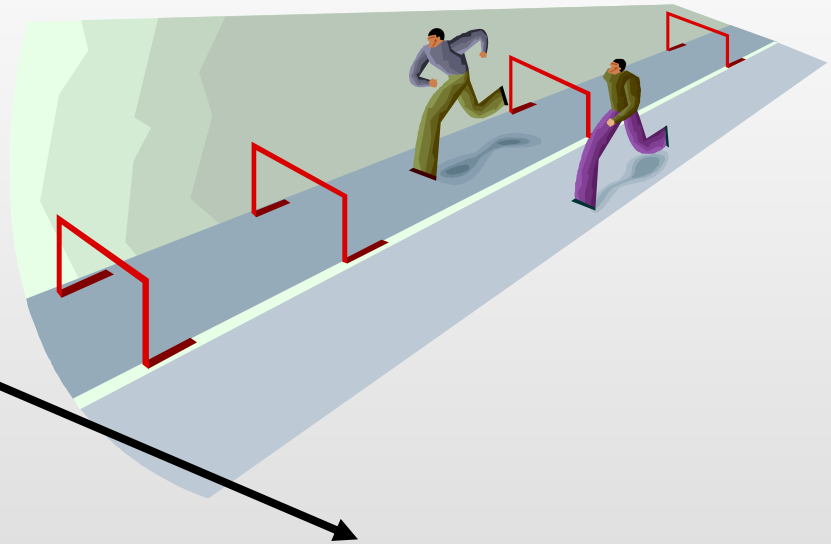
Phase 4 – Approach

Step 1: Baseline workshops to identify obstacles to sustainable land revitalization

Step 2: Feasibility study to determine which obstacles the U.S.-German Bilateral Working Group can address

Step 3: Research and develop tools and techniques and technologies to overcome obstacles to sustainable land revitalization

Step 4: Beta-test tools and techniques to determine if they facilitate sustainable land revitalization



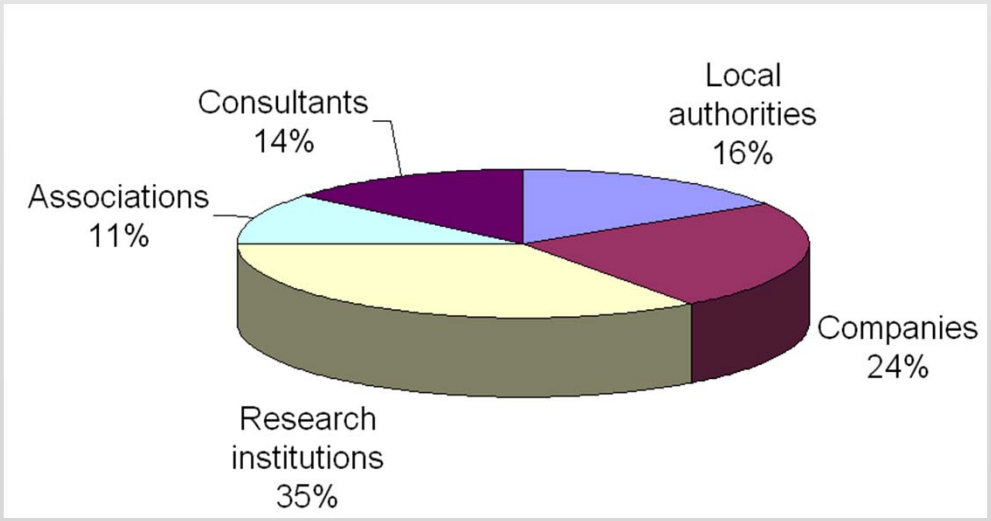
REFINA

SHARE IDEAS AND EXPERIENCES

What is REFINA?

- **BMBF Research Program for the Reduction of Land Consumption and for Sustainable Land Management**
- *Forschung für die **RE**duzierung der **F**lächen**I**nanspruchnahme und ein **NA**chhaltiges Flächenmanagement*
- Funding: €22 million
- Duration: 2006-2010
- Projects: 45
- Concerted action between BMBF, BMU, BMVBS

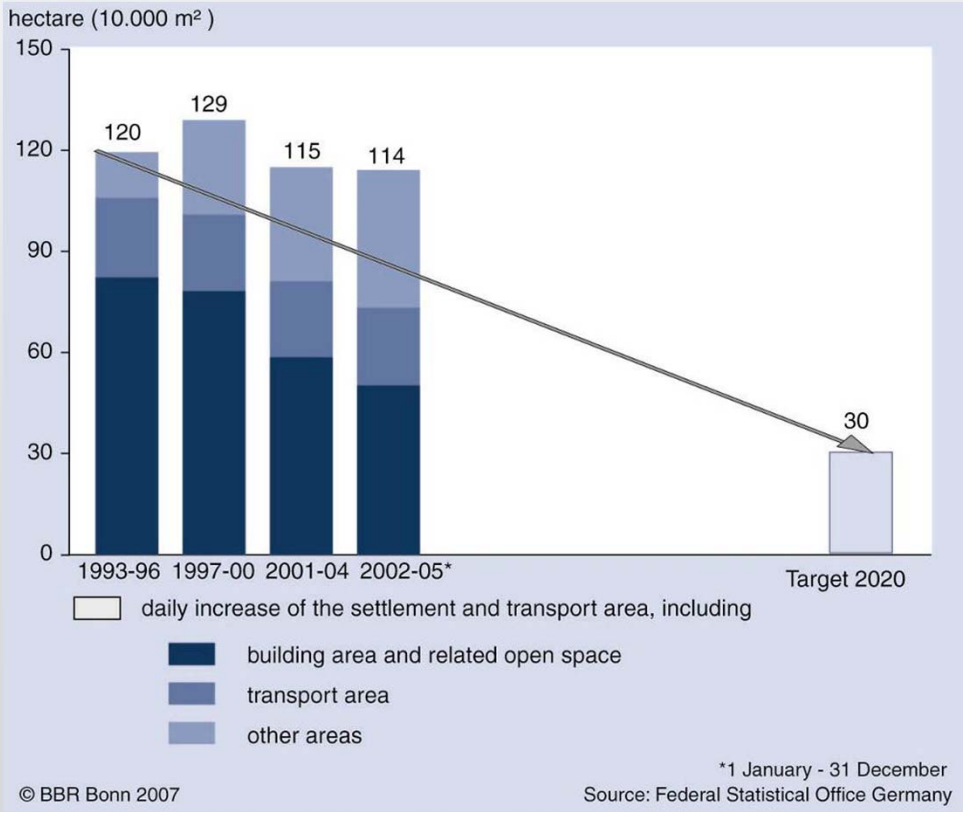
Integration of Federal Government, Länder, Local Authorities and Stakeholders



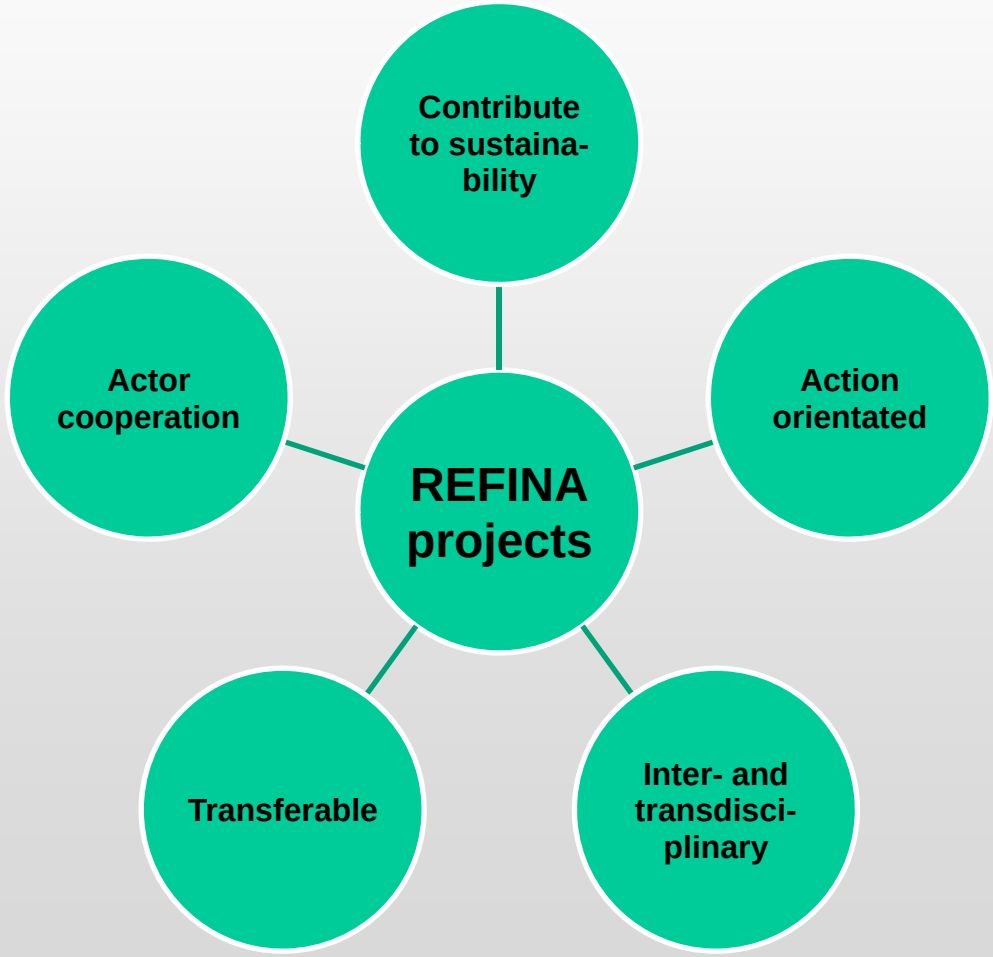
National Strategy for Sustainable Development
April 2002

- Reduction of greenfield “consumption” for settlement and transport-related development **to 30 ha/day (75 acres) in 2020**

- REFINA contributes to the 30 ha-goal of Federal Government.



REFINA Philosophy

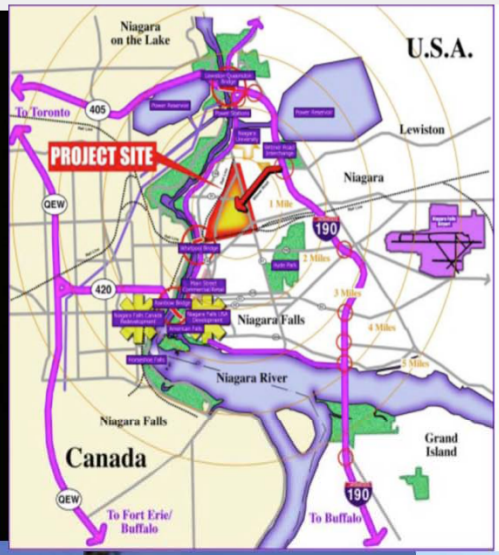


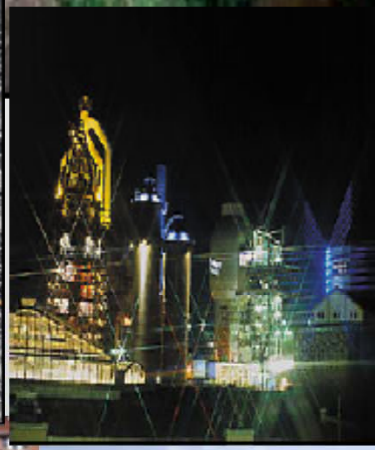
Bilateral Cooperation – Phase 4

- Cooperation based on REFINA projects with „volunteer“ practitioners in the US
- Projects should drive and benefit from the cooperation
- International cooperation
  - to learn from each other
  - to prove REFINA concepts
  - to strike new and unconventional paths in both countries

Phase 4 – Focus Areas (2006-2008)

- Brownscape Design
- Regional and Local Land Revitalization Planning
- Project Management





Design Charrettes

- develop analytical and methodological repertoires to reintegrate brownfield sites into functional urban areas
- combine round table, design workshop, jury evaluation

Charrette Westerholt
Gelsenkirchen/Herten, Germany
26-30 Nov 2007

Charrette North-West Aluminum
The Dalles, Oregon
28 Apr - 2 May 2008

Phase 4 – NY Workshop topics (8-9 May 2008)

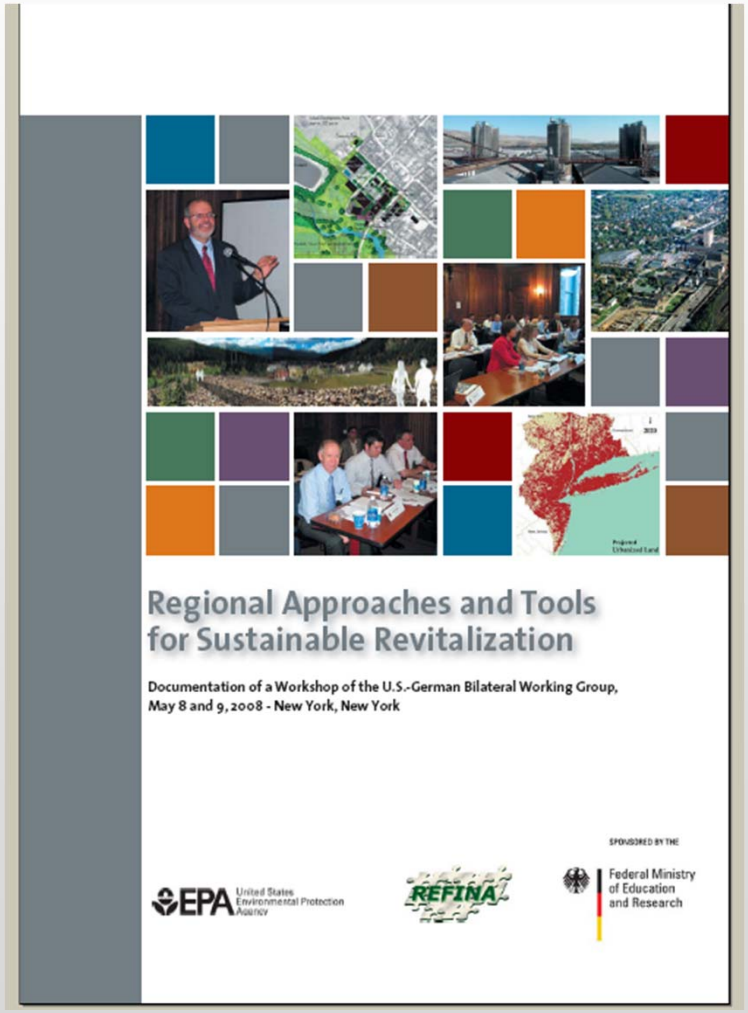
Regional Infrastructure and Transboundary Management

Brownscape Design

Financial Management

Cross-cutting – Regional planning Criteria for Site Prioritization

Workshop Report - Published



Phase 4 (2008-2012) – Move from REFINA to TASK

http://www.task.ufz.de/index.php?en=17107

- The Terra- Aqua- und Site Remediation Centre of Competence Leipzig (TASK) endeavours to increase and improve the visibility, acceptance and marketability of new innovative technologies and concepts in the fields of soil and groundwater, contaminated site revitalisation and remediation.

- In August 2007 the TASK initiative was funded under the direction of the Helmholtz Centre for Environmental Research – UFZ and the Federal Ministry of Education and Research (BMBF). The project corresponds with the proposals laid down in the Federal Government‘s High Tech Strategy with the central goal to improve and accelerate the practical application of knowledge gained by research.

Phase 4 – Under TASK

CRADA (April 2009-April 2012)

- DE.SMARTe/SMARTe Tools and Expansion

Sustainable Land Re-Use Tools

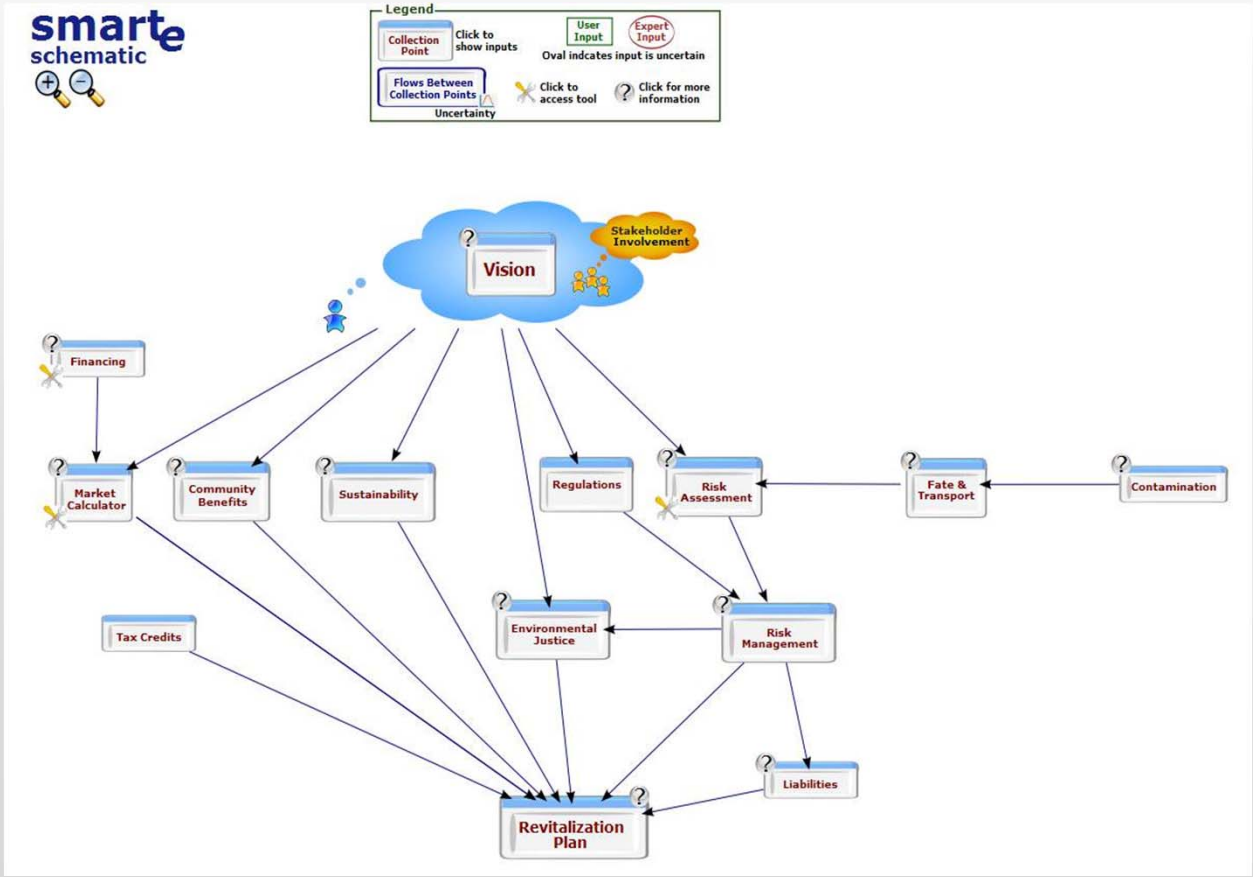
- SINBRA
- OPTIRISK
- PLACES
- Smart Growth Tools

DE.SMARTe

- Joint Co-operation Project U.S.EPA/UFZ/TASK
- 2008 – 2011
- “Mirror” Site DE.SMARTe.org
- New Tools (sustainability, cost estimation, spatial planning)
- “Re-Mirror” back to SMARTe
- Beta Tests with External Experts
- Joint U.S. EPA/TASK Workshops 2009, 2010

DE.SMARTe – cont'd

- Stock Taking SMARTe Architecture



Phase 4 Lessons Learned

SINBRA

- Easy to understand and implement
- Flexible
- Provides qualified and transparent results
- Provides a reliable framework for rational discussion of options
- Directly responds to community consensus
- The process of implementing the tools is as valuable as the tool's output because it gets people to thinking about alternatives.

Phase 4 Lessons Learned

Smart Growth Scorecard

- Is transferable to Germany
- achieves transparency
- Is suitable for improving existing projects
- Encourages cooperation between citizens and investors
- Requires “Process moderation“ before urban land-use planning

Phase 4 Lessons Learned

OPTIRISK

- Revitalization of ecologically damaged sites needs
  - a strong demand for the property
  - the concerted activity of the whole municipality with politics and administration
  - someone's top priority
  - external expert knowledge.
- Provides a platform for visually exploring options and representing them to diverse audiences and achieves better understanding and consensus.
- Graphically illustrates problems and opportunities.

Phase 4 Lessons Learned

PLACES

- Provided a tool to expose issues needing discussion and a vehicle to develop new ideas.
- Is useful in different contexts.
- Activated local stakeholders
- Was a strong addition to political agendas and shaped the agenda.
- fostered community self-awareness wrt environment and development issues and enabled these issues to be considered at local and regional levels in a cooperative atmosphere

Phase 4 Lessons Learned

- Transdisciplinary research and development increases the chance of successful adoption of tools and approaches.
- Decision-makers need additional tools/approaches to aid decision-making and they must help develop the tools/approaches along with stakeholders (e.g., **DASEES**).
- A better operation and maintenance model (e.g., **Greenvu**) is needed since software tools are expensive to maintain.

DASEES: Decision Analysis for a Sustainable Environment, Economy, and Society

- Goal: Improve the Agency's ability to incorporate scientific (e.g., environmental) knowledge with economic, legal, political and societal knowledge to better inform decisions
- Five Steps
  - Understand the context
  - Define objectives
  - Develop options
  - Evaluate options
  - Take action

DASEES is designed to help decision-makers and stakeholders:

- Incorporate science into complex land and resource use decisions (before and after impacts)
- Consider ecological impacts in addition to social and economic impacts
- Understand the systems and decision context
- Evaluate multiple options and tradeoffs
- Make decisions with uncertain information
- Address value conflicts
- Integrate and coordinate decisions across various groups, individuals, and physical boundaries

CRADA – EPA/UFZ/Greenvu

Rationale and Purpose

- EPA and UFZ do not always have the opportunity or resources to **"pilot test"** tools (decision support tools, models, assessment tools, etc.) in realistic settings to obtain valuable feedback and impact/outcome information.
- While EPA and the UFZ support the *development* of many of these tools, EPA nor the UFZ plan for the continued *operation and maintenance* of all tools developed. It is often the EPA's and UFZ's intent to **transfer** a tool to an outside party (as both EPA and UFZ are publically funded).
- The CRADA is intended to test whether or not Greenvu can assist EPA and UFZ in these two areas, and also to help **market** EPA and UFZ developed tools.

EPA Tool Contributions

- SMARTe: Sustainable Management Approaches and Revitalization Tools – electronic
  - A copy of SMARTe in its entirety - code and all - for further development and operation and maintenance by Greenvu.
  - SMARTe will also be used for pilot testing to generate feedback and document outcomes/impacts.
- PLACES: Planning Land and Communities to be Environmentally Sustainable (for pilot testing only)
- DASEES: Decision Analysis for a Sustainable Environment, Economy, and Society (for pilot testing only)
- Technical assistance, as needed and possible.

UFZ Tool Contributions

- Pilot testing only:
  - MMT: Megasite Management Toolsuite
  - VIT: Vapor Intrusion Tool
  - Characterization and monitoring procedures tool
  - Web based tool for integrated planning and assessment of revitalization options for brownfields
  - Optirisk: Optimization of the site development of polluted, unused properties.
- Technical assistance as needed.

Greenvu Contributions

Greenvu and its partners will

- Post all tools and summary information in the Green Tool Room.
- Revise and expand SMARTe and continue its operation and maintenance.
- Implement pilot projects:
  - Test EPA and UFZ contributed tools via pilot projects
  - Document successful test results in various media
  - Post documentation/results to the GreenVu website
  - Provide feedback to tool developers regarding improvement suggestions

Greenvu and its University partners will

- Use the data, results, and pilot testing work to create academic curricula to educate future generations of scientists and professionals

Web Sites

US-German Bilateral Working Group

http://www.bilateral-wg.org/

REFINA

www.refina-info.de

TASK

http://www.task.ufz.de/

MMT

http://www.d-site.de/index.php/software/mmt

SMARTe

smarte.org

Greenvu

http://greenvu.org/