

geoCRE - eine kollaborative Forschungsumgebung zur Verwaltung räumlicher Daten



Entwicklung einer webbasierten
kollaborativen Forschungsumgebung zur
Verwaltung räumlicher Daten auf Basis freier
Software

Albert-Ludwigs-Universität Freiburg

Mark Hoschek
Physische Geographie
Uni Freiburg

E-Mail: mark.hoschek@geographie.uni-freiburg.de



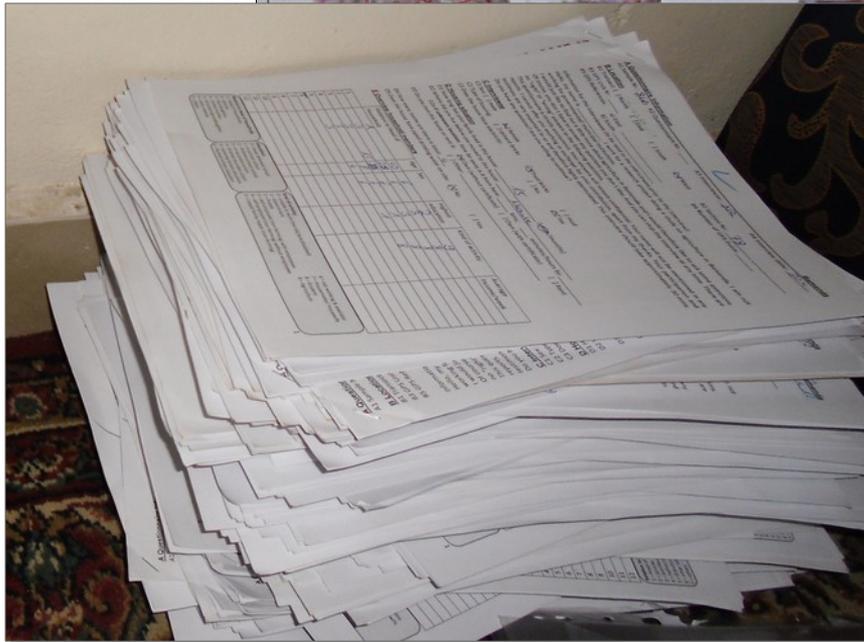
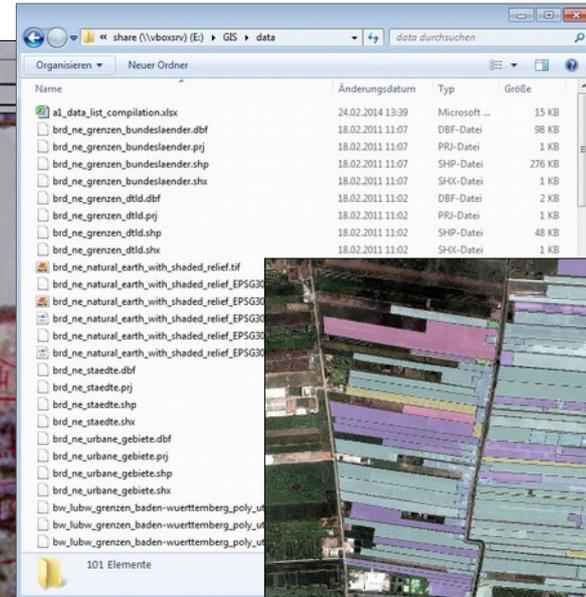
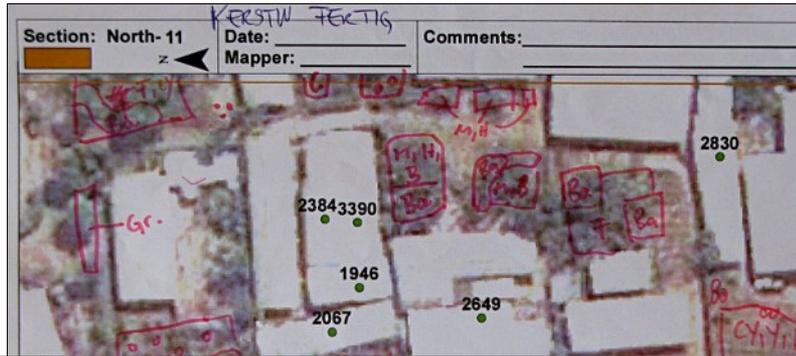
UNI
FREIBURG

Worum es geht...



Fotos: Johannes Schlesinger, Rouven Volkmann, Mark Hoschek

Worum es geht...



Worum es geht...

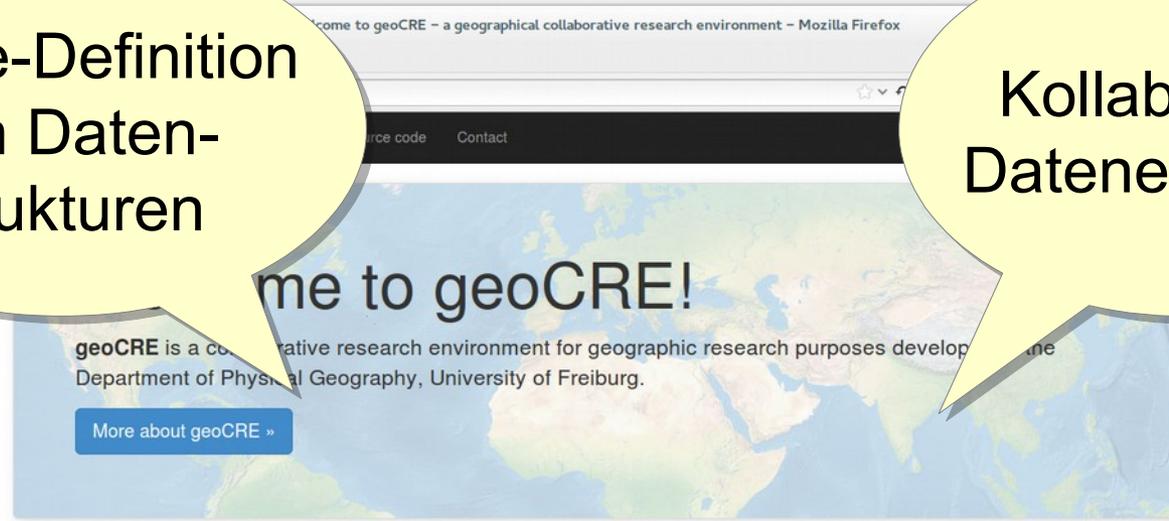


Worum es geht...



Online-Definition
von Daten-
strukturen

Kollaborative
Datenerhebung



Niedrige
Zugangshürden,
Benutzer-
freundlichkeit

Einfache
Datenverfügbarkeit,
Datensicherung

About geoCRE

Documentation

Source code



Documentation of the collaborative research environment including system requirements, installation instructions and user manual. [Documentation >](#)

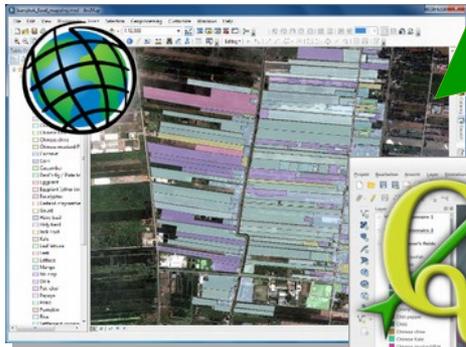
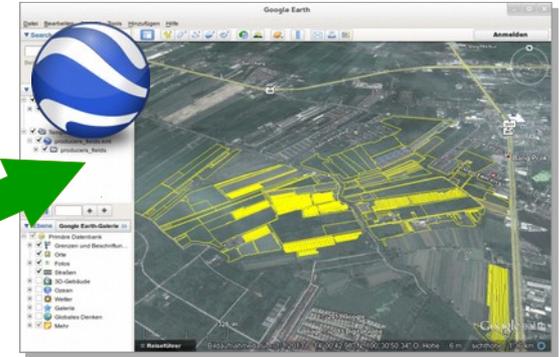


© 2013 University of Freiburg / Physical Geography - Contact

Datenverfügbarkeit und Konvertierung

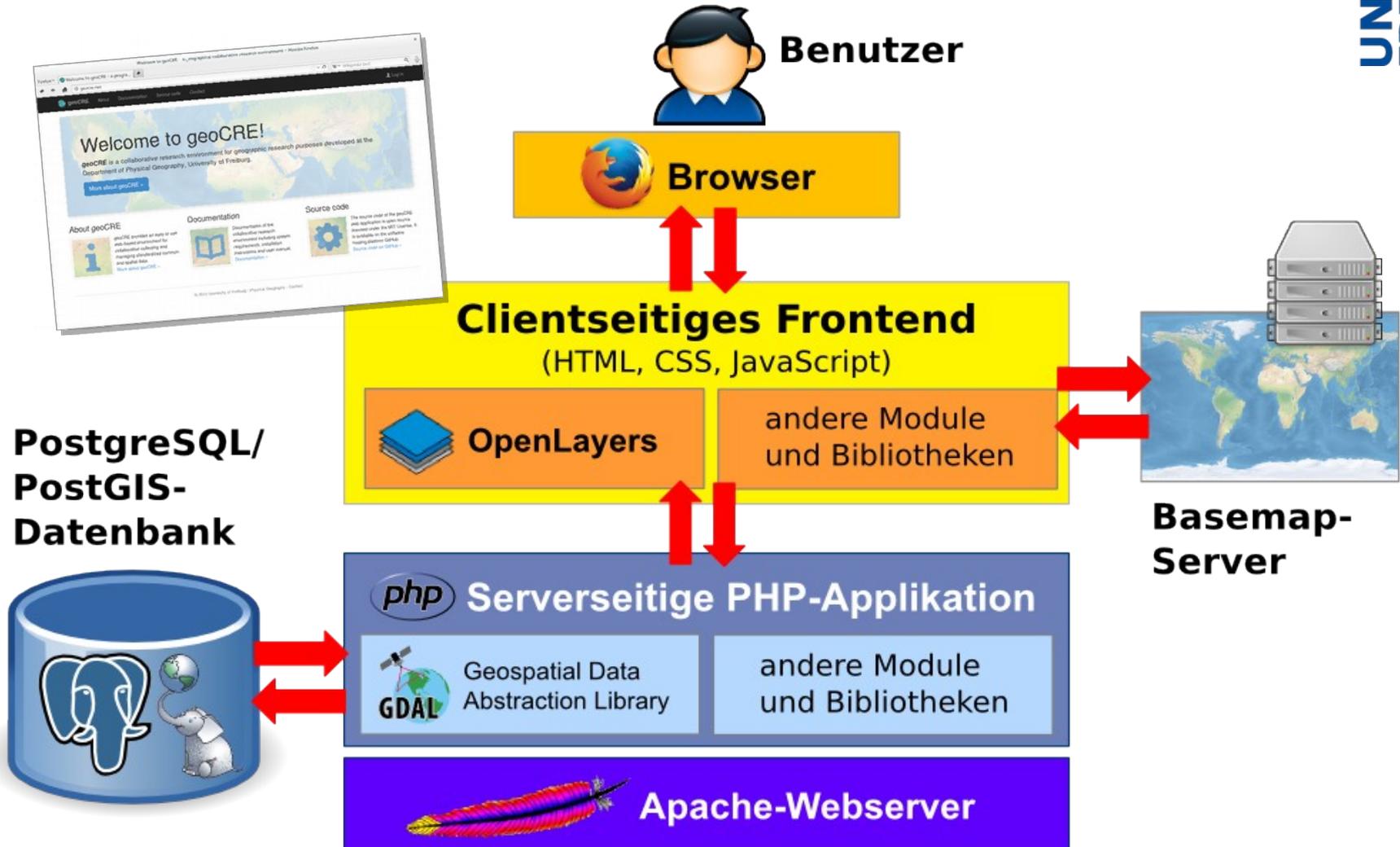


A1 farmer ID	A2 Site Code	A3 Interview date	B1 Name	B2 GPS Unit No.	B3 Number of GPS ...
13	F	2013-04-10	Sie Ma District		
14	G	2013-04-10	Charoen Nakorn 66 ...	7	N 13° 42' 0" E ...
9	E	2013-04-06			
8	E	2013-04-06			
16	HQ	2013-04-11	Tung Song Hong 313		



	Area	A3 StratID	A4 Sex	A5 Kind of P. A6 Employees A7 Family B...
1	36-37	TH04	female	non-business self-employ
2	36-37	TH04	female	non-business self-employ
3	36-37	TH04	female	non-business self-employ
4	36-37	TH04	female	non-business self-employ
5	36-37	TH04	female	non-business self-employ
6	36-37	TH04	female	non-business self-employ
7	36-37	TH04	female	non-business self-employ
8	36-37	TH04	female	non-business self-employ
9	36-37	TH04	female	non-business self-employ
10	36-37	TH04	female	non-business self-employ
11	36-37	TH04	female	non-business self-employ
12	36-37	TH04	female	non-business self-employ
13	36-37	TH04	female	non-business self-employ
14	36-37	TH04	female	non-business self-employ
15	36-37	TH04	female	non-business self-employ
16	36-37	TH04	female	non-business self-employ
17	36-37	TH04	female	non-business self-employ
18	36-37	TH04	female	non-business self-employ
19	36-37	TH04	female	non-business self-employ
20	36-37	TH04	female	non-business self-employ
21	36-37	TH04	female	non-business self-employ
22	36-37	TH04	female	non-business self-employ
23	36-37	TH04	female	non-business self-employ
24	36-37	TH04	female	non-business self-employ
25	36-37	TH04	female	non-business self-employ
26	36-37	TH04	female	non-business self-employ
27	36-37	TH04	female	non-business self-employ
28	36-37	TH04	female	non-business self-employ
29	36-37	TH04	female	non-business self-employ
30	36-37	TH04	female	non-business self-employ
31	36-37	TH04	female	non-business self-employ
32	36-37	TH04	female	non-business self-employ

Aufbau der Webapplikation



Benutzer und Gruppen



Users and groups

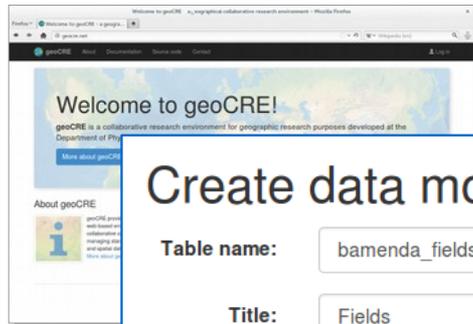
Users Groups

[Add group](#)

Group	Members	
Administrators	3	✎ ✖ IT
Data managers	1	✎ ✖ IT
Data collectors group 1 (producers)	34	✎ ✖ IT
Data collectors group 2 (community gardens)		✎ ✖ IT
Data collectors group 3 (markets)	1	✎ ✖ IT
Data collectors group 4 (consumers/street vendors)	1	✎ ✖ IT



Definition von Datenstrukturen



Create data model

Table name:

Title:

Project:

Parent table:

Type: common
 spatial
 no creation of database table (n)

Spatial data properties ▾

Geometry type: mixed
 point
 line
 polygon

Geometry required

Basemaps: Google Satellite (default)
 Google Hybrid (default)
 Google Physical (default)
 Google Streets (default)
 Bing Aerial (default)
 Bing Hybrid (default)
 OpenStreetMap (default)

if none is selected the default basemaps are used

Scale range:

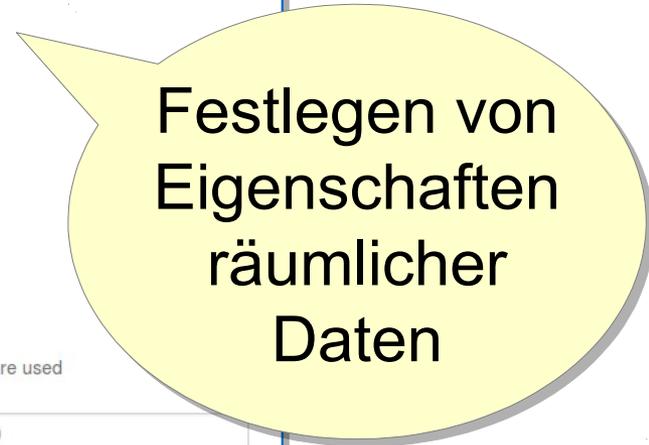
minimum/maximum scale (e.g. 50000 / 0) to display the layer from middle to highest zoom level)

Geometry simplification tolerance
Fixed simplification tolerance (e.g. 0.1)

Geometry simplification tolerance/extent factor
Variable simplification tolerance dependent on map extent (tolerance / bounding box diagonal degrees, e.g. 0.001)

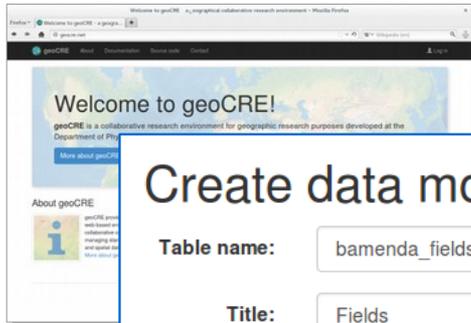
Layer overview: none
 point clustering
 convex hull
Simplified overview layer in lower zoom levels

Auxiliary layer:



Festlegen von
Eigenschaften
räumlicher
Daten

Definition von Datenstrukturen



Create data model

Table name:

Title:

Project:

Parent table:

Type: common spatial no creation of database table (ma...)

Identifier:
must begin with a lowercase letter and consist of lowercase letters, numbers and underscores

Label:
item label

Description:
item description

Item type: data section
Type of item

Data type/length:
Data type and optional length:

Section type:
section type (if no data type is specified)

Range:
range of numbers or string lengths

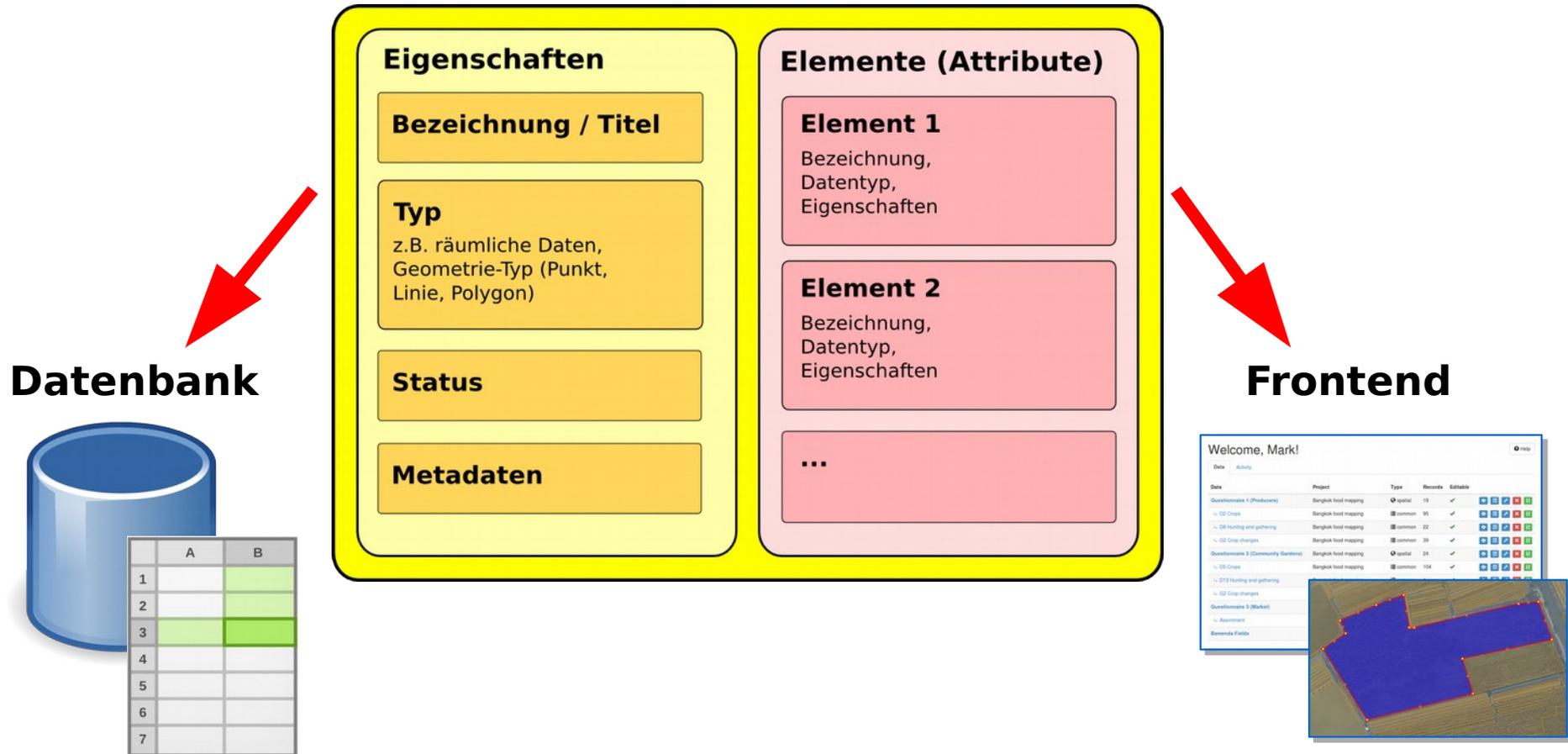
Choices: predefined selectable values, one value per line, optional labels in corresponding line; asterisk (*) in value as wildcard

Values:	Labels:
0	never attended
1	in primary sch
2	finished prima
3	in secondary
4	finished seco
5	receiving tertia
6	finished tertiary

Required:
check if field cannot be empty

Eigenschaften eines „Datenmodell-Elementes“

Datenmodell



Datenzugang und -bearbeitung



Welcome to geoCRE!

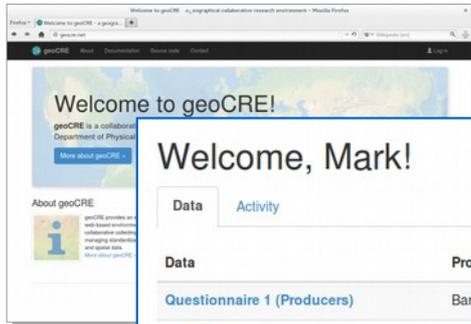
Welcome, Mark!

Data Activity

Data	Project	Type	Records	Editable	
Questionnaire 1 (Producers)	Bangkok food mapping	spatial	19	✓	[Icons]
↳ D2 Crops	Bangkok food mapping	common	95	✓	[Icons]
↳ D8 Hunting and gathering	Bangkok food mapping	common	22	✓	[Icons]
↳ G2 Crop changes	Bangkok food mapping	common	39	✓	[Icons]
Questionnaire 2 (Community Gardens)	Bangkok food mapping	spatial	24	✓	[Icons]
↳ D5 Crops	Bangkok food mapping	common	104	✓	[Icons]
↳ D13 Hunting and gathering	Bangkok food mapping	common	4	✓	[Icons]
↳ G2 Crop changes	Bangkok food mapping	common	27	✓	[Icons]
	Bangkok food mapping	spatial	132	✓	[Icons]
	Bangkok food mapping	common	472	✓	[Icons]
	Agriculture	spatial	2874	✓	[Icons]

Dashboard mit
persönlicher
Übersicht über
Datenbestände
und Optionen

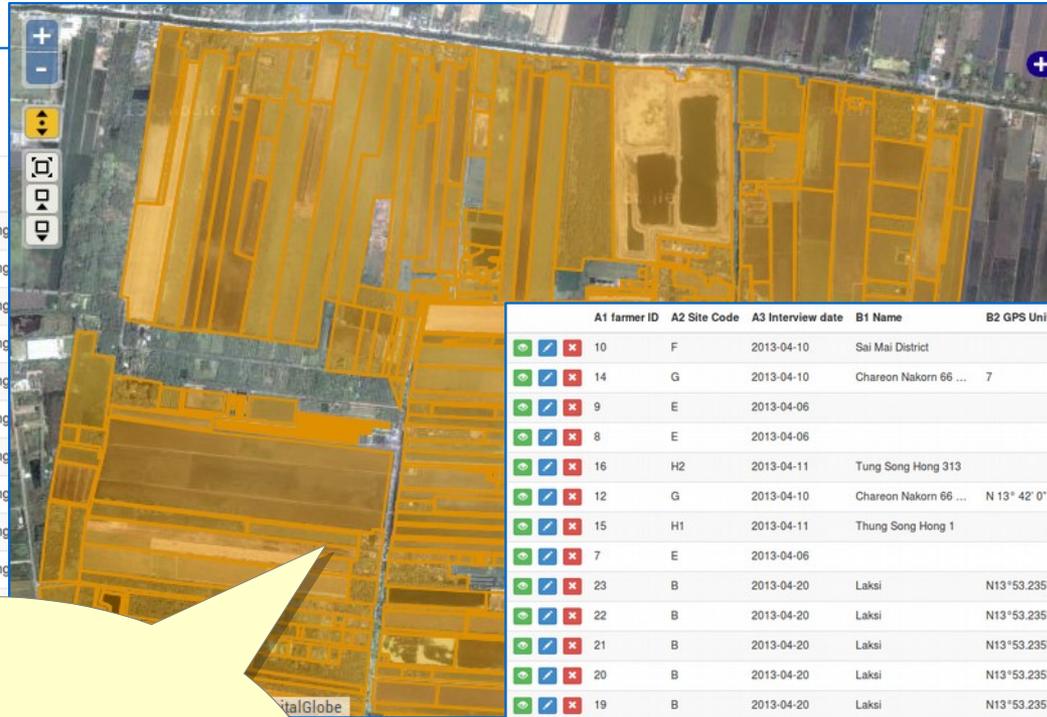
Datenzugang und -bearbeitung



Welcome, Mark!

Data Activity

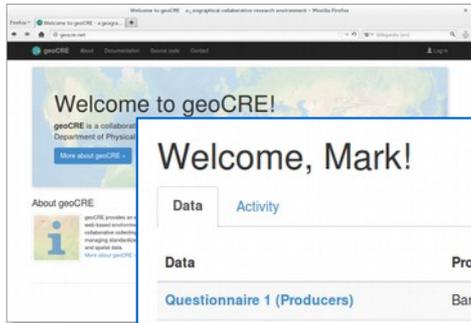
Data	Project
Questionnaire 1 (Producers)	Bangkok food mapping
↳ D2 Crops	Bangkok food mapping
↳ D8 Hunting and gathering	Bangkok food mapping
↳ G2 Crop changes	Bangkok food mapping
Questionnaire 2 (Community Gardens)	Bangkok food mapping
↳ D5 Crops	Bangkok food mapping
↳ D13 Hunting and gathering	Bangkok food mapping
↳ G2 Crop changes	Bangkok food mapping
Questionnaire 3 (Market)	Bangkok food mapping
↳ Assortment	Bangkok food mapping
Bamenda Fields	Bangkok food mapping



	A1 farmer ID	A2 Site Code	A3 Interview date	B1 Name	B2 GPS Unit Nr.	B3 Number of GPS ...
	10	F	2013-04-10	Sai Mai District		
	14	G	2013-04-10	Chareon Nakorn 66 ...	7	N 13° 42' 0" E ...
	9	E	2013-04-06			
	8	E	2013-04-06			
	16	H2	2013-04-11	Tung Song Hong 313		
	12	G	2013-04-10	Chareon Nakorn 66 ...		N 13° 42' 0" E ...
	15	H1	2013-04-11	Thung Song Hong 1		
	7	E	2013-04-06			
	23	B	2013-04-20	Laksi	N13°53.235' ...	CG2Tue
	22	B	2013-04-20	Laksi	N13°53.235' ...	CG2Tue
	21	B	2013-04-20	Laksi	N13°53.235' ...	CG2Tue
	20	B	2013-04-20	Laksi	N13°53.235' ...	CG2Tue
	19	B	2013-04-20	Laksi	N13°53.235' ...	CG2Tue
	18	B	2013-04-20	Laksi	N13°53.235' ...	CG2Tue
	17	B	2013-04-20	Laksi	N13°53.235' ...	CG2Tue
	24	B	2013-04-20	Laksi	N13°53.235' ...	CG2Tue
	13	G	2013-04-10	Chareon Nakorn 66 ...		N 13° 42' 0" E ...
	6	E	2013-04-06	Prince Home Garden ...		
	11	F	2013-04-10	Sai Mai District		N 13° 53' 798" ...
	5	D	2013-04-05	Ladprao District ...		N 100.615688 E ...

Datenübersicht
(Geometrien
und Attribute)

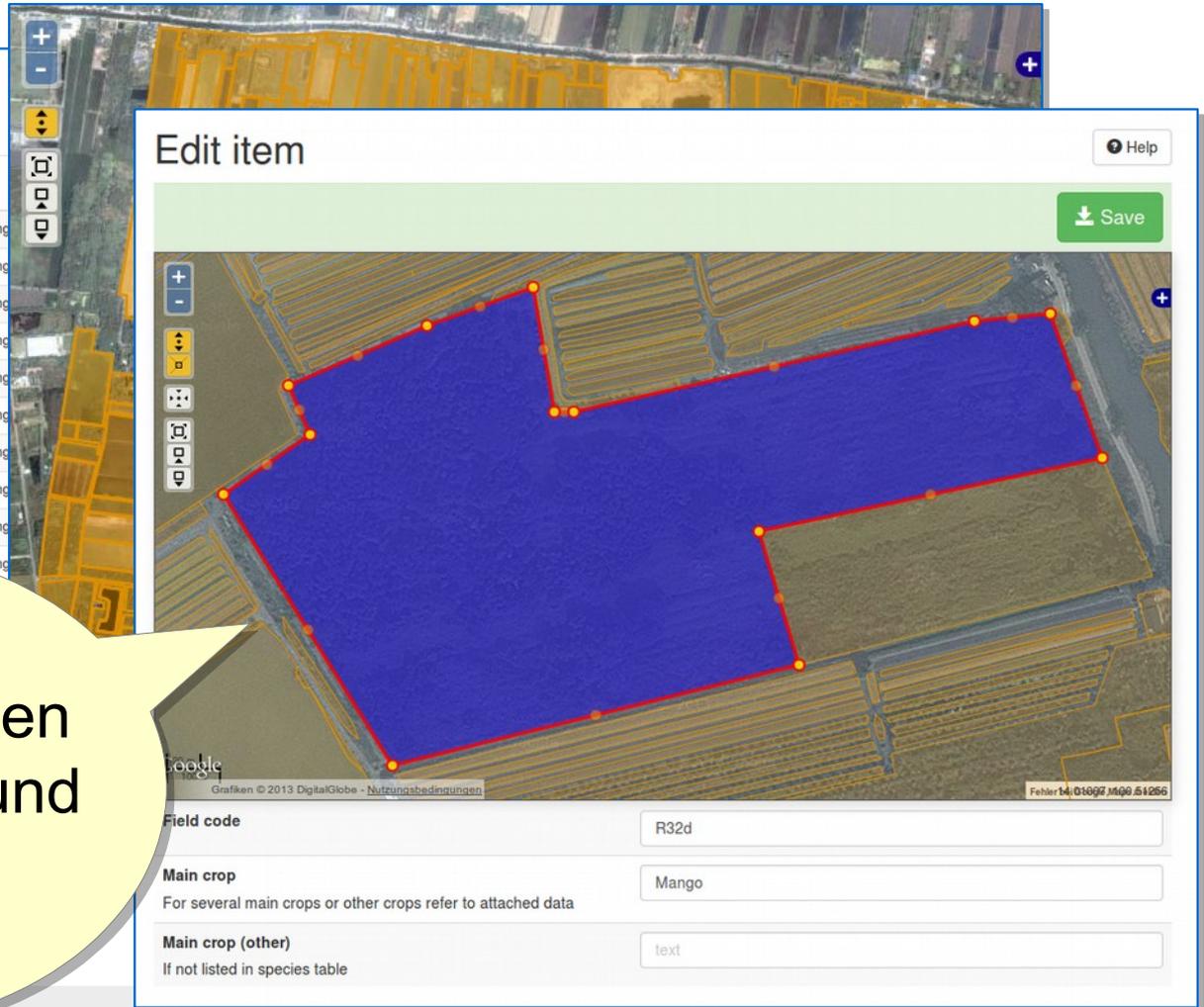
Datenzugang und -bearbeitung



Welcome, Mark!

Data Activity

Data	Project
Questionnaire 1 (Producers)	Bangkok food mapping
↳ D2 Crops	Bangkok food mapping
↳ D8 Hunting and gathering	Bangkok food mapping
↳ G2 Crop changes	Bangkok food mapping
Questionnaire 2 (Community Gardens)	Bangkok food mapping
↳ D5 Crops	Bangkok food mapping
↳ D13 Hunting and gathering	Bangkok food mapping
↳ G2 Crop changes	Bangkok food mapping
Questionnaire 3 (Market)	Bangkok food mapping
↳ Assortment	Bangkok food mapping
Bamend...	Bangkok food mapping



Daten-
eingabemasken
Für reguläre und
räumliche
Daten



vegGIS

Understanding Urban and Periurban Vegetable Production and Marketing Systems through GIS-based Community Food Mapping in Greater Bangkok, Thailand

veggis.geographie.uni-freiburg.de



UrbanFood^{Plus} 2013/2014



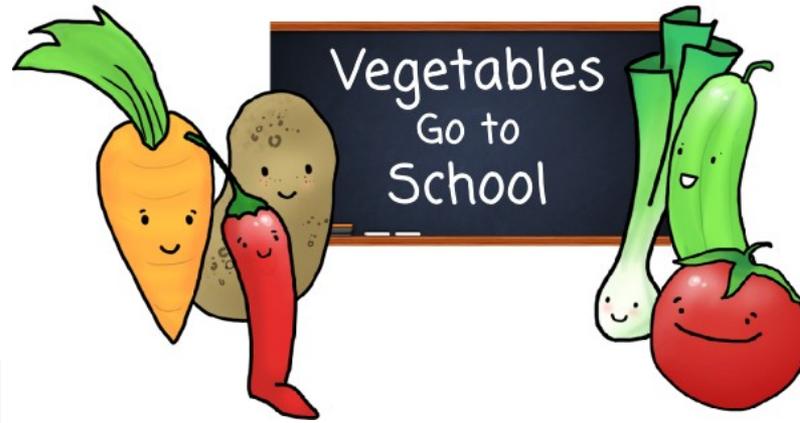
*African-German partnership
to enhance resource use
efficiency in urban and
peri-urban agriculture for
improved food security in
West African cities*

www.urbanfoodplus.org



Fotos: Edmund K. Akoto-Danso, Christoph Steiner

Vegetables Go to School 2014



Vegetables Go to School is a project to address malnutrition, particularly among children, by establishing comprehensive school vegetable garden programs in selected countries in Africa and in Asia.

vgts.avrdc.org



Fotos: AVRDC

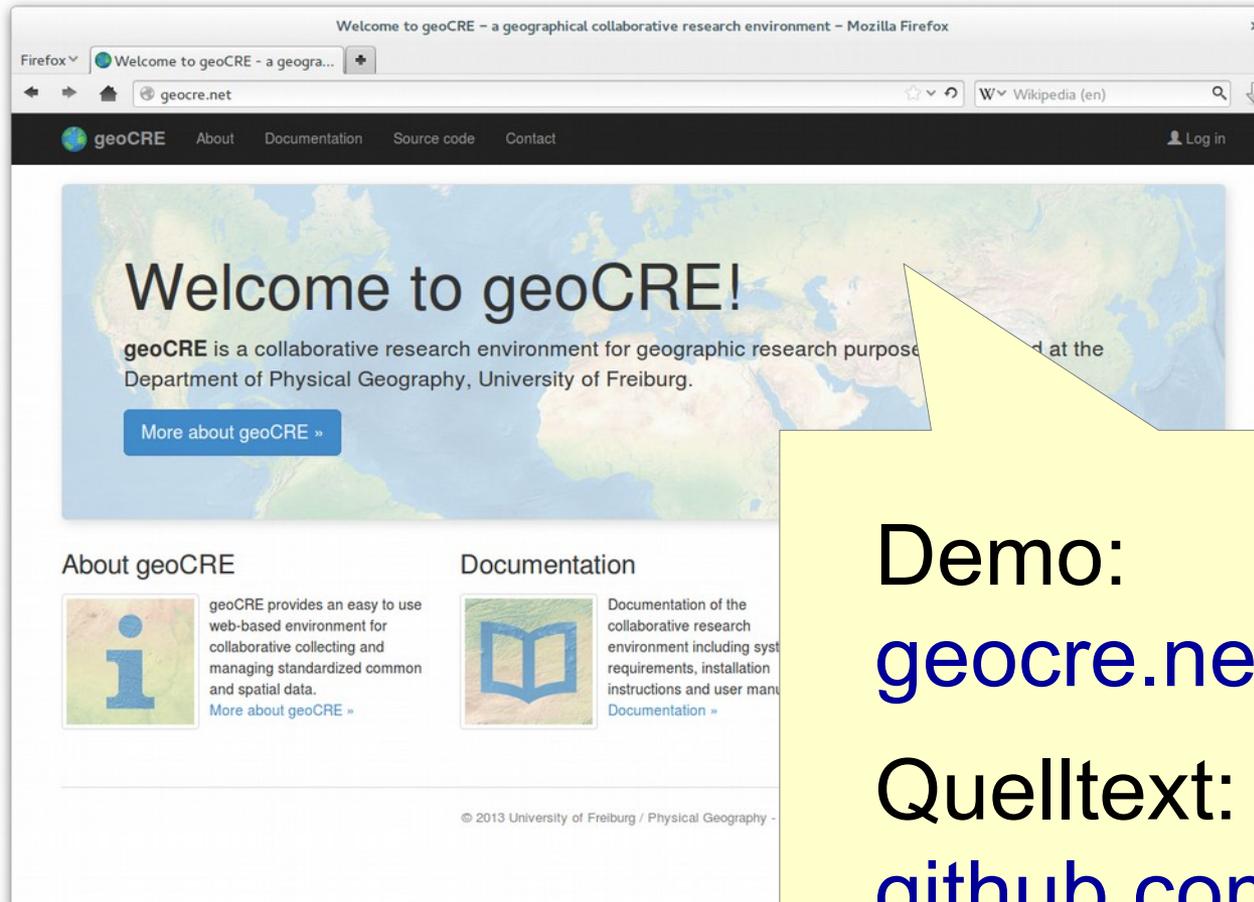
- Ein zentrales, webbasiertes Werkzeug zur Verwaltung von Daten ist allgemein sehr hilfreich in Forschungsprojekten, an denen mehrere Personen beteiligt sind
- Die kollaborative Forschungsumgebung hat sich bewährt und wurde gut angenommen
- Selbst bei mangelnder Internet-Verfügbarkeit bestehen die Vorteile einer zentralen, strukturierten und standardisierten Datenverwaltung

Ausblick & To-do



- Datenimport (CSV, Shapefile, GPX, Excel, ...)
- Unterstützung von Rasterdaten
- OpenLayers 3
- Online-Datenanalyse
- Datenvisualisierung und -präsentation
- Offline-Tools / Apps für die Datenerhebung
- ...

Demo und Quelltext



Demo:
geocre.net
Quelltext:
github.com/geocre