

BEXIS 2 User Guide

For SPP 2089



Foreword

This guide was created upon request to guide how to collect research data in the SPP 2089 project. The BEXIS 2 Help files offered by BEXIS 2 team are not associated with the SPP 2089 user requirements. There are several options on every scenario available. We want to create a distinctive and efficient guide to use by the SPP 2089 researchers. This user manual explains practical ways to do any action. Nevertheless, any suggestions for improving and developing this guide are more than welcome. Please send feedback to Nafiseh.navabpour@ufz.de.

Hints

Execution environment: BEXIS 2 is a web browser compatible application. Google Chrome is the most suitable browser for it, while most functions are not working in IE. If you are using the Mozilla Firefox, please note that you need to allow the pop-up windows.

Upload limitation: There is no restriction on the number of data attributes and data tuples from BEXIS 2 version 2.14.2. The only thing you need to keep in mind is that BEXIS 2 does not accept file upload over to 1GB.

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How do I start?

Please note that the different BEXIS 2 instances work separately. If you registered in the SPP 2089 BEXIS 2 platform (<https://spp2089.ufz.de:4433>), you would only be able to log in to this platform and see a list of datasets on it.

To work with BEXIS 2, you should first successfully register in a BEXIS 2 platform. See: [How do I register?](#)

To have access to the BEXIS 2 functions, you need a valid registration. Then you should log in to the BEXIS 2 platform. See: [How do I log in?](#)

If you forgot your username, see [I forgot my username!](#)

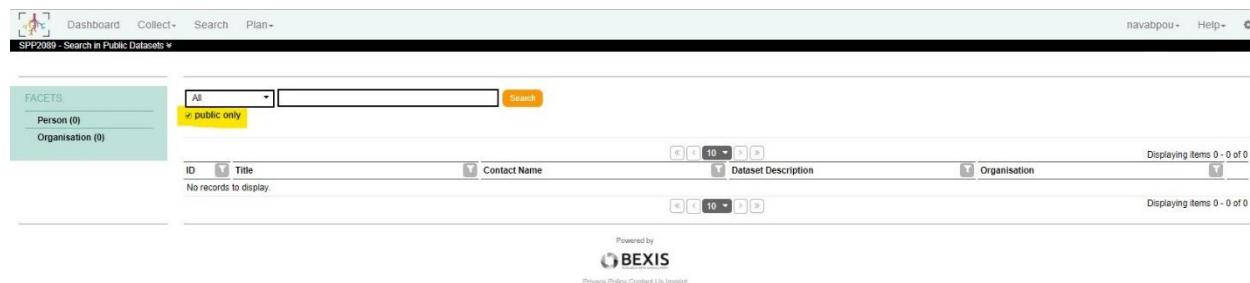
If you forgot your password, see [I forgot my password!](#)

Dashboard

All datasets that you uploaded or you have access listed in your dashboard. You can control which information you are interested in your panel by right-clicking on a space in the header.

Search

To see a list of uploaded datasets, go to the **Search** page. Untick the option **public only** to see a list of all datasets.



In the left pane, you can find listings of people and organizations. Choosing any option limits your search to that item.

ID	Title	Contact Name	Dataset Description	Organisation
12	PSD for Sand	Nafiseh Navabpour	PSD values for sand	UFZ - Department Soil System Science
13	PSD for Loam	Nafiseh Navabpour	PSD values for sand	UFZ - Department Soil System Science
14	Loam/Sand fitted parameters	Maxime Phalempin	Test dataset from Maxime	UFZ - Department Soil System Science
16	Soil water retention	Maxime Phalempin		UFZ - Department Soil System Science
19	SPP 2089 people/Project Information	Nafiseh Navabpour		
20	Test Column Experiment	Susanne Schreiter	This test is created by Susanne	
21	P01_SPE_20181206	Nafiseh Navabpour		
31	P01_SPE_20190110	Eva Lippold		
37	Master_col analysis_WP1_2016.02.05_su.xlsx			
38	P01_SPE_20181206	Nafiseh Navabpour		
44	P01_SPE_20190307	Eva Lippold		
52	P01_SPE_20190110_1	Eva Lippold		
61	P01_SPE_20191115	Doris Vetterlein	taken on 29th of november 2018 in Bad Lauchstädt out of t...	
62	Test - File Format Dataset	Nafiseh Navabpour		
66	Dataset/Owner Information	Nafiseh	Information about uploaded datasets	

If you want to download a dataset, see [How do I download a dataset?](#)

If you want to upload data to the BEXIS 2 platform, see [How do I upload data to a dataset?](#)

Data collection

Data collection in BEXIS 2 starts with creating a dataset. To create a dataset, see [How do I create a Dataset?](#)

As the dataset is made, it connects to a data structure. Before uploading data, you need to check that data structure and make sure that it is compatible with your data table. To examine a data structure, see [How do I edit a Data Structure?](#)

When your data structure is ready, you will be able to upload your data table. To upload data, see [How do I upload data to a dataset?](#)

How do I register?

1. Open the BEXIS 2 platform from [here](#) (or copy and paste "https://SPP2089.ufz.de:4433" in your internet browser).



The screenshot shows the BEXIS 2 platform homepage. The top navigation bar includes 'Dashboard', 'Collect', 'Search', 'Plan', 'Register', 'Login', and 'Help'. The main content area has a 'FACETS' sidebar on the left with 'Person (1)' and 'Organisation (1)' sections. A search bar with 'All' selected and a 'Search' button is in the center. Below is a table with columns: ID, Title, Owner Name, Contact Name, Dataset Description, and Organisation Name. One row is visible: ID 11, Title 'SPP2089 People Project Information', Owner Name 'Nafiseh Navabpour', Contact Name 'Nafiseh Navabpour', Dataset Description 'Collection of the name, email and project information of the people involved in the SPP2089 project.', and Organisation Name 'UFZ - Helmholtz Centre for Environmental Research'. The bottom of the page includes a 'Powered by BEXIS' logo and links for 'Privacy Policy', 'Contact Us', and 'Imprint'.

2. Click on the **Register** (Find it in the menu bar, on the right side).

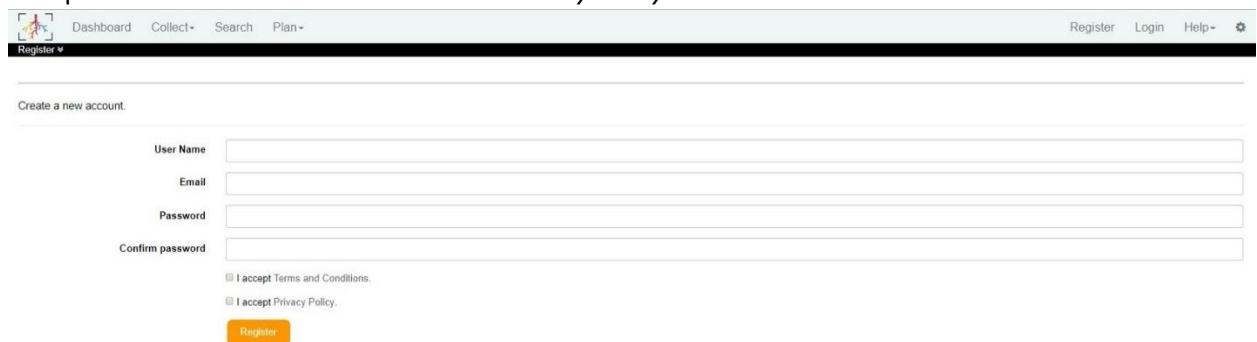


The screenshot shows the BEXIS 2 platform registration page. The top navigation bar includes 'Dashboard', 'Collect', 'Search', 'Plan', 'Register' (which is circled in red), 'Login', and 'Help'. The main content area has a 'FACETS' sidebar on the left with 'Person (1)' and 'Organisation (1)' sections. A search bar with 'All' selected and a 'Search' button is in the center. Below is a table with columns: ID, Title, Owner Name, Contact Name, Dataset Description, and Organisation Name. One row is visible: ID 11, Title 'SPP2089 People Project Information', Owner Name 'Nafiseh Navabpour', Contact Name 'Nafiseh Navabpour', Dataset Description 'Collection of the name, email and project information of the people involved in the SPP2089 project.', and Organisation Name 'UFZ - Helmholtz Centre for Environmental Research'. The bottom of the page includes a 'Powered by BEXIS' logo and links for 'Privacy Policy', 'Contact Us', and 'Imprint'.

3. Fill the registration form.

There is no specific password restriction.

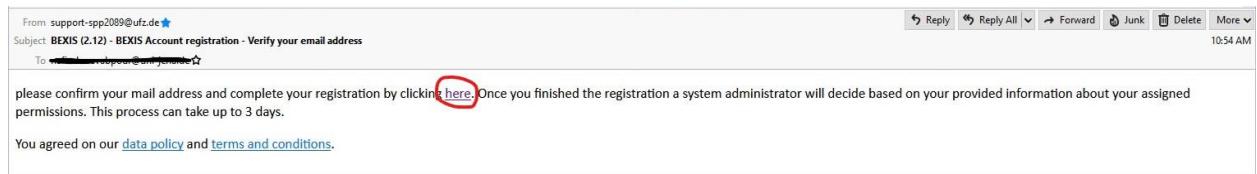
Accept the *Terms and Conditions* and the *Privacy Policy*.



The screenshot shows the BEXIS 2 registration form. The top navigation bar includes 'Dashboard', 'Collect', 'Search', 'Plan', 'Register' (highlighted in red), 'Login', and 'Help'. The main content area has a 'Create a new account.' heading. There are four input fields: 'User Name', 'Email', 'Password', and 'Confirm password'. Below these are two checkboxes: 'I accept Terms and Conditions.' and 'I accept Privacy Policy.'. At the bottom is an orange 'Register' button.

4. Click on the orange button **Register**.

5. Open your email address which you entered in the registration formula.
6. Open the email received from support-spp2089@ufz.de.
(The title would be "BEXIS (2.12) - BEXIS Account registration - Verify your email address")
7. Click on the confirmation link.



8. The BEXIS 2 will open in your default browser. You see your user name on the menu bar on the right side, close the Help menu item.

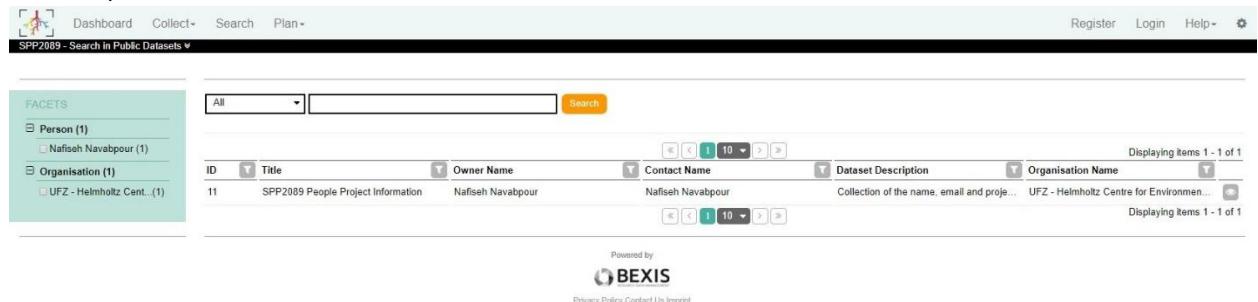
Enter your information in the formula. The red star next to a field means it is required.

9. Click on the orange button **Save**.

10. You will receive an email from your data manager (nafiseh.navabpour@ufz.de) to inform you about your registration process's completeness.

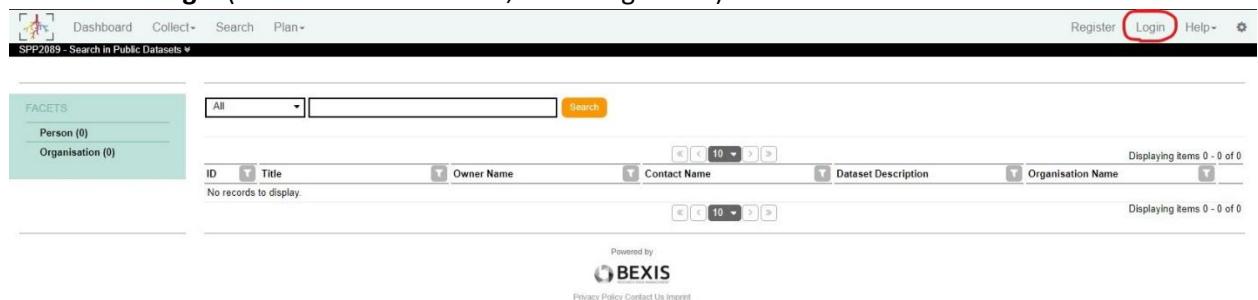
How do I log in?

1. Open the BEXIS 2 from [here](#) (or copy and paste "SPP2089.ufz.de:4433" in your internet browser).



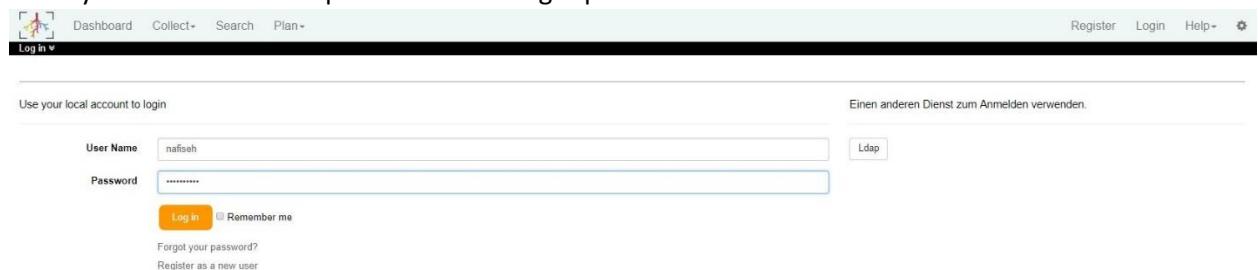
The screenshot shows the BEXIS 2 search interface for the SPP2089 dataset. The top navigation bar includes 'Dashboard', 'Collect', 'Search', 'Plan', 'Register', 'Login', 'Help', and a gear icon. The left sidebar, titled 'FACETS', shows 'Person (1)' with 'Nafiseh Navabpour (1)' and 'Organisation (1)' with 'UFZ - Helmholtz Cent... (1)'. The main search area has a search bar and a table displaying one dataset. The table columns are 'ID', 'Title', 'Owner Name', 'Contact Name', 'Dataset Description', and 'Organisation Name'. The dataset listed is 'SPP2089 People Project Information' with owner 'Nafiseh Navabpour', contact 'Nafiseh Navabpour', description 'Collection of the name, email and project information of the people involved in the project.', and organization 'UFZ - Helmholtz Centre for Environmental Research'. The bottom of the page includes a 'Powered by BEXIS' logo and links to 'Privacy Policy', 'Contact Us', and 'Imprint'.

2. Click on the **Login** (Find it in the menu bar, on the right side).



The screenshot shows the BEXIS 2 search interface after clicking 'Login'. The 'Login' button in the top right menu bar is highlighted with a red circle. The rest of the interface is identical to the previous screenshot, showing the search bar, facets, and dataset list.

3. Enter your user name and password in the right places.



The screenshot shows the BEXIS 2 login form. The top navigation bar includes 'Dashboard', 'Collect', 'Search', 'Plan', 'Register', 'Login', 'Help', and a gear icon. The 'Login' button is highlighted with a red circle. The main form area has fields for 'User Name' (containing 'nafiseh') and 'Password' (containing '.....'). Below these are buttons for 'Log in' (highlighted with a red circle), 'Remember me', 'Forgot your password?', and 'Register as a new user'. A note at the top says 'Use your local account to login' and 'Einen anderen Dienst zum Anmelden verwenden.'

4. Click on the orange button **Login**.

5. The platform refers to your dashboard. If it denies your access, please contact your data manager (Nafiseh.navabpour@ufz.de).

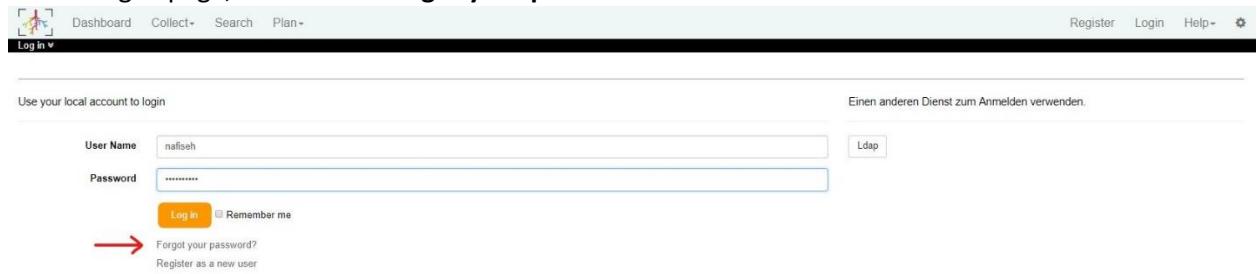
I forgot my username!

You are not able to login to BEXIS 2 if you have forgotten your username. Please contact your data manager (Nafiseh.navabpour@ufz.de).

I forgot my password!

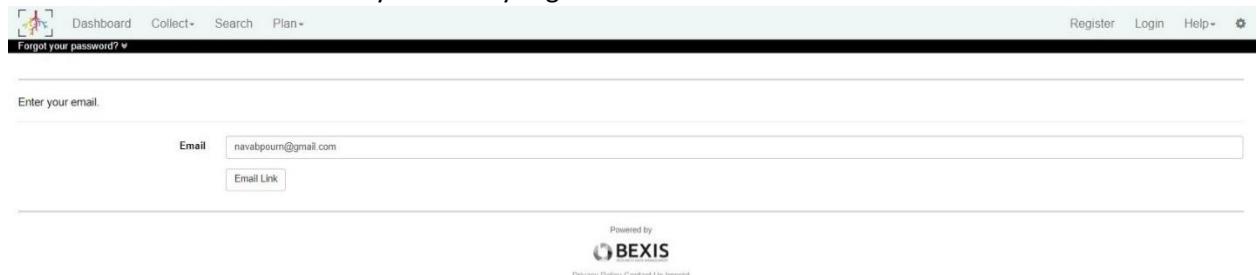
Do not worry! If you forgot your password follow the next steps.

1. On the log in page, click on the **Forgot your password**.



The screenshot shows the BEXIS 2 login interface. At the top, there is a navigation bar with links for Dashboard, Collect, Search, Plan, Register, Login, Help, and a gear icon. Below the navigation bar is a login form with fields for 'User Name' (containing 'nafiseh') and 'Password'. There are buttons for 'Log in', 'Remember me', 'Forgot your password?', and 'Register as a new user'. A red arrow points to the 'Forgot your password?' link.

2. Enter the email address which you already registered.

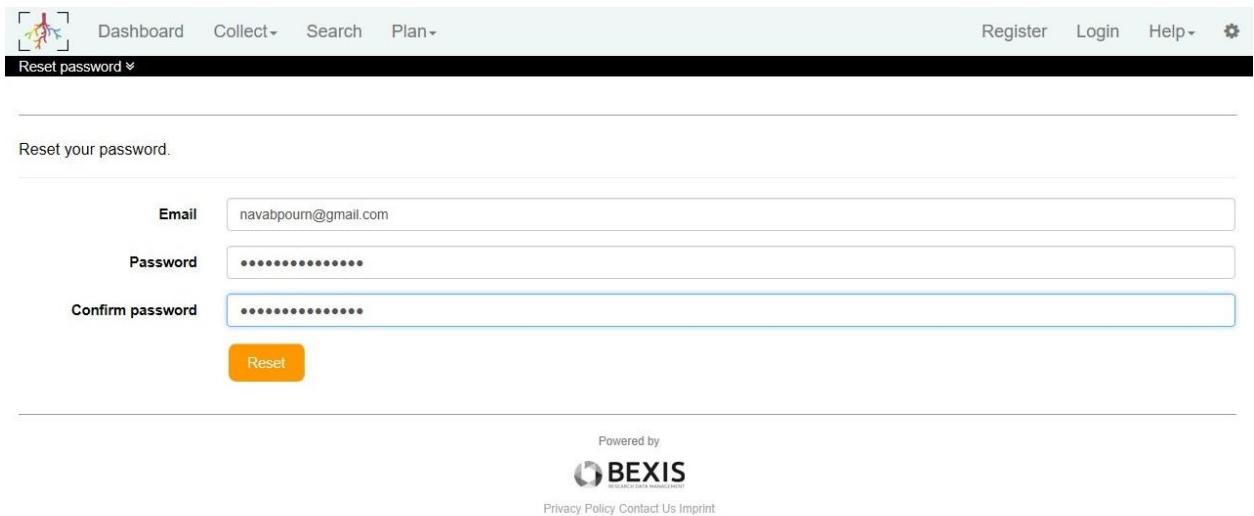


The screenshot shows the BEXIS 2 password recovery interface. At the top, there is a navigation bar with links for Dashboard, Collect, Search, Plan, Register, Login, Help, and a gear icon. Below the navigation bar is a form with a field for 'Email' (containing 'navabpour@gmail.com') and a button for 'Email Link'. A red arrow points to the 'Email Link' button.

3. Click on the **Email Link** button.
4. Open your email account and find the email from *support-spp2089@ufz.de*.
The subject should contain *Reset Password*.
5. Click on the link provided in the email to recover your password.



6. Enter your email address and twice the new password on the reset password formula.



Reset your password.

Email navabpour@gmail.com

Password *****

Confirm password *****

Reset

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7. Click on the orange button **Reset**.
8. A confirmation message will appear. Click on the provided link and log in with the new password.

click here to log in'. Below is the BEXIS logo and links to 'Privacy Policy', 'Contact Us', and 'Imprint'." data-bbox="174 397 942 504"/>

Reset password confirmation.

Your password has been reset. Please [click here to log in](#)

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What does a Data Type mean?

A data type is a particular kind of data item, as defined by the variables it can take. While creating a data structure, you need to know the exact type of each variable. For example, you need to specify how you want to store the length of an event. You may save it in different ways like "3-4", "10cm", "15" or "13.8". Note that the data type you choose for a variable must be consistent with all data associated with it. The following describes the most commonly used data types in data collections.

String

A string variable is a standard text. It could be any combination of characters (a-z and A-Z) and numbers (0-9). The name of species or places is the most popular variable in string format.

Number

A number in the BEXIS 2 data type system is a whole number, not a fraction. It can be positive, negative, or zero. For example, 21, 4, 0, and -2048 are numbers, while 0.23 and -4/3 are not. A number covers a range of values from -65,535 to 65,535.

Integer

An integer is a number but covers a bigger range from -2,147,483,648 to 2,147,483,647.

Double

Double Types are probably the most commonly used data type for real values, except handling money. It contains 15 digits like 12.6, 0.74667, or -345.4.

Decimal

Decimal can accurately represent any number within the precision of the decimal format. It could contain 28 significant digits.

The main difference between double and decimal is that decimals have much higher precision within monetary (financial) applications that require a high degree of accuracy. But in performance, wise computing decimals are slower than double types.

DateTime

The format of "yyyy-MM-ddThh:mm:ss" determines the DateTime.

In the SPP 2089 BEXIS 2 instance, we have three alternatives: **text** for String, the **whole number** for Integer, and the **real number** for double. Two data types are created based on DateTime. The data type **date** is like DateTime, but **time** accepts the form HH:mm:ss.

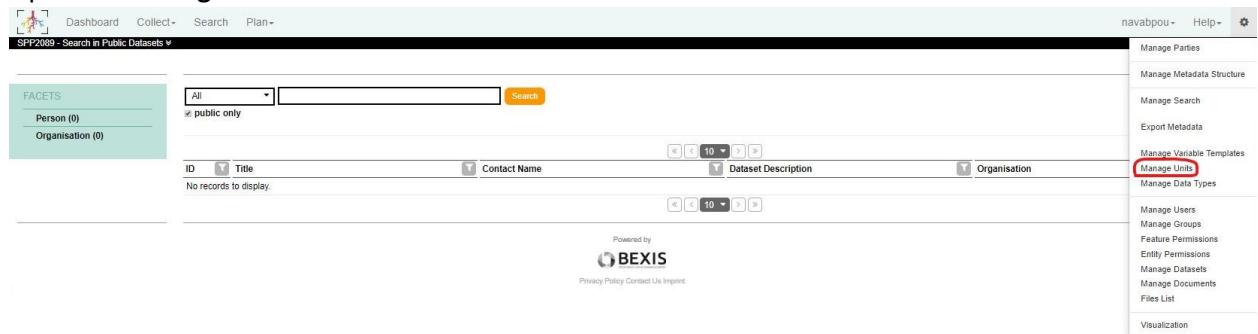
How do I create a Data Type

Creating a data type is not recommended. If you require a new data type, please contact your Data Manager (Nafiseh.navabpour@ufz.de). Consultation with the working group is required.

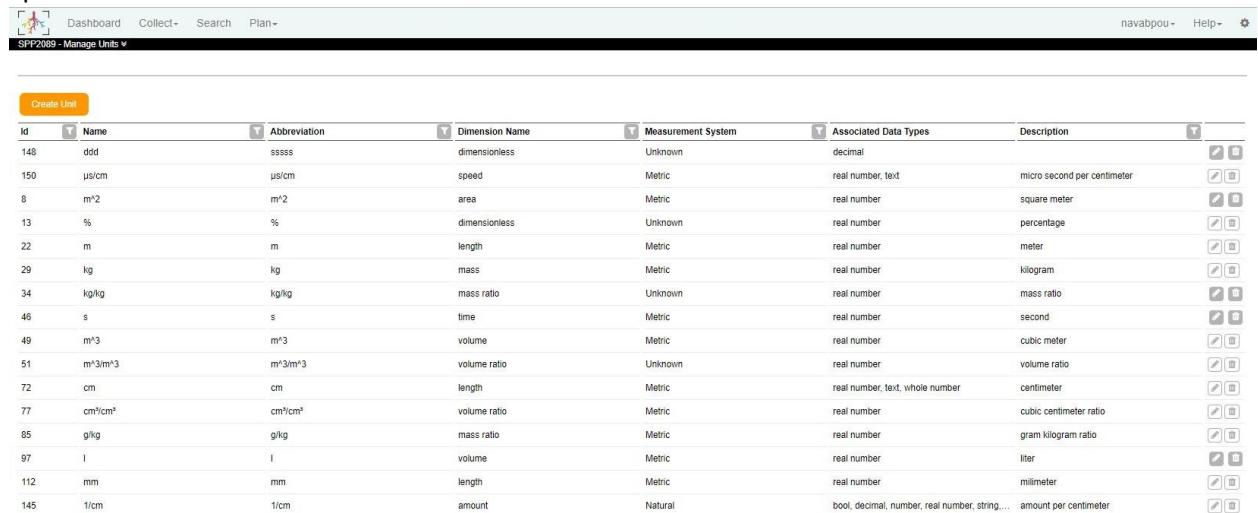
How do I create a Unit of measurement?

From two gateways is **Manage Units** available. One is under the Plan menu item, and the other is under the gear button.

1. Open the **Manage Units**.



2. Spend a bit of time to ensure that the unit does not exist in the list of units.



ID	Name	Abbreviation	Dimension Name	Measurement System	Associated Data Types	Description
148	ddd	sssss	dimensionless	Unknown	decimal	
150	μs/cm	μs/cm	speed	Metric	real number, text	micro second per centimeter
8	m²	m²	area	Metric	real number	square meter
13	%	%	dimensionless	Unknown	real number	percentage
22	m	m	length	Metric	real number	meter
29	kg	kg	mass	Metric	real number	kilogram
34	kg/kg	kg/kg	mass ratio	Unknown	real number	mass ratio
46	s	s	time	Metric	real number	second
49	m³	m³	volume	Metric	real number	cubic meter
51	m³/m³	m³/m³	volume ratio	Unknown	real number	volume ratio
72	cm	cm	length	Metric	real number, text, whole number	centimeter
77	cm³/cm³	cm³/cm³	volume ratio	Metric	real number	cubic centimeter ratio
85	g/kg	g/kg	mass ratio	Metric	real number	gram kilogram ratio
97	l	l	volume	Metric	real number	liter
112	mm	mm	length	Metric	real number	millimeter
145	1/cm	1/cm	amount	Natural	bool, decimal, number, real number, string,...	amount per centimeter

3. Click on the **Create Unit**. A modal window will open and helps you to create a new unit.

Create Unit

Name *	<input type="text"/>
Abbreviation *	<input type="text"/>
Description	<input type="text"/>
Dimension Name *	<input type="text" value="Select or Enter"/>
Dimension Specification	<input type="text" value="L(0,0)M(0,0)T(0,0)I(0,0)Θ(0,0)N(0,0)J(0,0)"/>
Measurement System	<input type="text" value="Unknown"/>

Id	Name	System Type	Description
2	decimal	Decimal	Decimal
3	date	DateTime	DateTime
4	datetime	DateTime	DateTime
7	number	Int16	An 16 bit integer number
8	bool	Boolean	A boolean value
9	text	String	For a long text
...

Save **Cancel**

4. Enter a **meaningful name** for the unit.

Create Unit

Name *	<input type="text" value="redacted"/>
Abbreviation *	<input type="text"/>
Description	<input type="text"/>
Dimension Name *	<input type="text" value="Select or Enter"/>
Dimension Specification	<input type="text" value="L(0,0)M(0,0)T(0,0)I(0,0)Θ(0,0)N(0,0)J(0,0)"/>
Measurement System	<input type="text" value="Unknown"/>

Id	Name	System Type	Description
2	decimal	Decimal	Decimal
3	date	DateTime	DateTime
4	datetime	DateTime	DateTime
7	number	Int16	An 16 bit integer number
8	bool	Boolean	A boolean value
9	text	String	For a long text
...

Save **Cancel**

5. Enter a **related abbreviation**.

Create Unit

Name *	<input type="text"/>
Abbreviation *	<input type="text"/>
Description	<input type="text"/>
Dimension Name *	<input type="text" value="Select or Enter"/>
Dimension Specification	<input type="text" value="L(0,0)M(0,0)T(0,0)I(0,0)Θ(0,0)N(0,0)J(0,0)"/>
Measurement System	<input type="text" value="Unknown"/>

Id	Name	System Type	Description
2	decimal	Decimal	Decimal
3	date	DateTime	DateTime
4	datetime	DateTime	DateTime
7	number	Int16	An 16 bit integer number
8	bool	Boolean	A boolean value
9	text	String	For a long text
...

Save **Cancel**

6. Write a **short description** in a few words.

Create Unit

Name *	<input type="text"/>
Abbreviation *	<input type="text"/>
Description	<input type="text"/>
Dimension Name *	<input type="text" value="Select or Enter"/>
Dimension Specification	<input type="text" value="L(0,0)M(0,0)T(0,0)I(0,0)Θ(0,0)N(0,0)J(0,0)"/>
Measurement System	<input type="text" value="Unknown"/>

Id	Name	System Type	Description
2	decimal	Decimal	Decimal
3	date	DateTime	DateTime
4	datetime	DateTime	DateTime
7	number	Int16	An 16 bit integer number
8	bool	Boolean	A boolean value
9	text	String	For a long text
...

Save **Cancel**

7. Select a **dimension** for the unit.

Create Unit

Name *	<input type="text"/>
Abbreviation *	<input type="text"/>
Description	<input type="text"/>
Dimension Name *	<input type="text" value="Select or Enter"/>
Dimension Specification	<input type="text" value="L(0,0)M(0,0)T(0,0)I(0,0)Θ(0,0)N(0,0)J(0,0)"/>
Measurement System	<input type="text" value="Unknown"/>

Id	Name	System Type	Description
2	decimal	Decimal	Decimal
3	date	DateTime	DateTime
4	datetime	DateTime	DateTime
7	number	Int16	An 16 bit integer number
8	bool	Boolean	A boolean value
9	text	String	For a long text
...

Save **Cancel**

8. If you are not familiar with **Dimension Specification**, please do not touch this field.

Create Unit

Name *	<input type="text"/>
Abbreviation *	<input type="text"/>
Description	<input type="text"/>
Dimension Name *	<input type="text" value="Select or Enter"/>
Dimension Specification	<input type="text" value="L(0,0)M(0,0)T(0,0)I(0,0)Θ(0,0)N(0,0)J(0,0)"/>
Measurement System	<input type="text" value="Unknown"/>

Id	Name	System Type	Description
2	decimal	Decimal	Decimal
3	date	DateTime	DateTime
4	datetime	DateTime	DateTime
7	number	Int16	An 16 bit integer number
8	bool	Boolean	A boolean value
9	text	String	For a long text
...

Save **Cancel**

9. Select a **Measurement System** for the unit of measurement.

Create Unit

Name *	<input type="text"/>
Abbreviation *	<input type="text"/>
Description	<input type="text"/>
Dimension Name *	<input type="text" value="Select or Enter"/>
Dimension Specification	<input type="text" value="L(0,0)M(0,0)T(0,0)I(0,0)Θ(0,0)N(0,0)J(0,0)"/>
Measurement System	<input type="text" value="Unknown"/>

Id	Name	System Type	Description
2	decimal	Decimal	Decimal
3	date	DateTime	DateTime
4	datetime	DateTime	DateTime
7	number	Int16	An 16 bit integer number
8	bool	Boolean	A boolean value
9	text	String	For a long text
...

Save **Cancel**

10. Select at least one Data Type from the table of data types.

Create Unit

Name *	<input type="text"/>
Abbreviation *	<input type="text"/>
Description	<input type="text"/>
Dimension Name *	<input type="text" value="Select or Enter"/>
Dimension Specification	<input type="text" value="L(0,0)M(0,0)T(0,0)I(0,0)Θ(0,0)N(0,0)J(0,0)"/>
Measurement System	<input type="text" value="Unknown"/>

Id	Name	System Type	Description
2	decimal	Decimal	Decimal
3	date	DateTime	DateTime
4	datetime	DateTime	DateTime
7	number	Int16	An 16 bit integer number
8	bool	Boolean	A boolean value
9	text	String	For a long text
...

Save **Cancel**

11. Click on the **Save** button, and the created unit should appear in the list.

Create Unit

Name *	<input type="text"/>
Abbreviation *	<input type="text"/>
Description	<input type="text"/>
Dimension Name *	<input type="text" value="Select or Enter"/>
Dimension Specification	<input type="text" value="L(0,0)M(0,0)T(0,0)I(0,0)Θ(0,0)N(0,0)J(0,0)"/>
Measurement System	<input type="text" value="Unknown"/>

		Name		System Type		Description	
<input type="checkbox"/>		2		decimal		Decimal	
<input type="checkbox"/>		3		date		DateTime	
<input type="checkbox"/>		4		datetime		DateTime	
<input type="checkbox"/>		7		number		Int16	
<input type="checkbox"/>		8		bool		Boolean	
<input type="checkbox"/>		9		text		String	
<input type="checkbox"/>		

Save **Cancel**

What is a Variable Template?

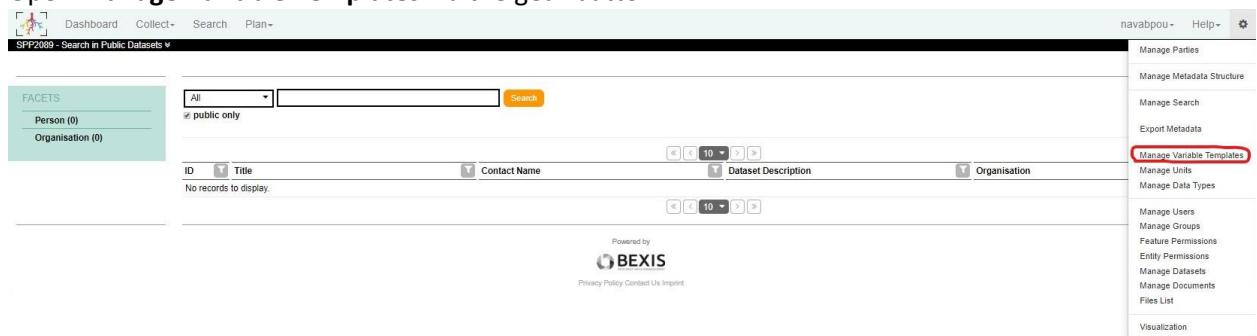
A Variable Template is a reusable Variable. It merely means you don't need to create a variable each time you need to use it in a dataset. You can use an existing variable template and change its properties based on your needs or favorites. For example, the variable template "ID_Text" exists. You can use this as an identifier, like "Species" in your dataset. You can add the "ID_Text" variable template to your data structure and change its name. This way of using variable templates is speedy and secure. Therefore, please take a look at the list of variable templates before creating a new one.

A list of Variable Templates is available in the **Manage Variable Templates** under the gear button.

How do I create a Variable Template?

Follow the steps below to create a variable template. Please note that other users can use each variable template. It would be nice if you chose a descriptive name and a short description to explain the goal of creating a variable template.

1. Open **Manage Variable Templates** via the gear button.



The screenshot shows the BEXIS 2 user interface. At the top, there is a navigation bar with links for 'Dashboard', 'Collect', 'Search', and 'Plan'. On the right side of the top bar, there is a dropdown menu for 'navabpou' and a 'Help' link. Below the top bar, there is a search bar with a dropdown menu set to 'All' and a checkbox for 'public only'. To the right of the search bar is a 'Search' button. Below the search bar, there is a table with columns for 'ID', 'Title', 'Contact Name', 'Dataset Description', and 'Organisation'. The table is currently empty, showing 'No records to display'. At the bottom of the page, there is a 'Powered by BEXIS' logo and links for 'Privacy Policy', 'Contact Us', and 'Imprint'. On the right side of the page, there is a sidebar with various management options: 'Manage Parties', 'Manage Metadata Structure', 'Manage Search', 'Export Metadata', 'Manage Variable Templates' (which is highlighted with a red box), 'Manage Units', 'Manage Data Types', 'Manage Users', 'Manage Groups', 'Feature Permissions', 'Entity Permissions', 'Manage Datasets', 'Manage Documents', 'Files List', and 'Visualization'.

2. Be sure that any of the Variable Templates is not suitable for your favorite variable.
3. Click on the **Create Variable Template**. A modal window will open and help you by creating a new variable template.

Create Variable Template

Name *	<input type="text"/>	Description	<input type="text"/>
Short Name	<input type="text"/>		
Unit	<input type="text"/> %		
Data Type	<input type="text"/> real number		
Constraints ▾			
Save Cancel			

4. Enter a **Name** for the variable template.

Create Variable Template

Name *	<input type="text"/>	Description	<input type="text"/>
Short Name	<input type="text"/>		
Unit	<input type="text"/> %		
Data Type	<input type="text"/> real number		
Constraints ▾			
Save Cancel			

5. Enter a **Short Name**.

It recommends entering the same words under Name and Short Name fields.

Create Variable Template

Name *	<input type="text"/>	Description	<input type="text"/>
Short Name	<input type="text"/>		
Unit	<input type="text"/> %		
Data Type	<input type="text"/> real number		
Constraints ▾			
Save Cancel			

6. Write a short description in a few words.

Create Variable Template

Name *	<input type="text"/>	Description
Short Name	<input type="text"/>	
Unit	<input type="text" value="%"/>	
Data Type	<input type="text" value="real number"/>	

Constraints ↴

Save **Cancel**

7. Select a **Unit** for the variable template.

Create Variable Template

Name *	<input type="text"/>	Description
Short Name	<input type="text"/>	
Unit	<input type="text" value="%"/>	
Data Type	<input type="text" value="real number"/>	

Constraints ↴

Save **Cancel**

8. Select a **Data Type**.

Create Variable Template

Name *	<input type="text"/>	Description
Short Name	<input type="text"/>	
Unit	<input type="text" value="%"/>	
Data Type	<input type="text" value="real number"/>	

Constraints ↴

Save **Cancel**

9. Define **Constraints** if you want to set limitations.

Create Variable Template

Name *	<input type="text"/>	Description	<input type="text"/>
Short Name	<input type="text"/>		
Unit	<input type="text"/> %		
Data Type	<input type="text"/> real number		
Constraints 			
Save Cancel			

10. Click on the **Save** button, and you will find the variable template in the list.

Create Variable Template

Name *	<input type="text"/>	Description	<input type="text"/>
Short Name	<input type="text"/>		
Unit	<input type="text"/> %		
Data Type	<input type="text"/> real number		
Constraints 			
Save Cancel			

What does a Data Structure mean?

In BEXIS 2, data is stored and managed as part of a dataset. A dataset may be anything, e.g., a word document, a zip file, images, or a collection of millions of records and multiple variables. The maximum file size per upload is 1G. To store large datasets such as CT images, we have agreed to keep only information about the images and their storage in BEXIS 2.

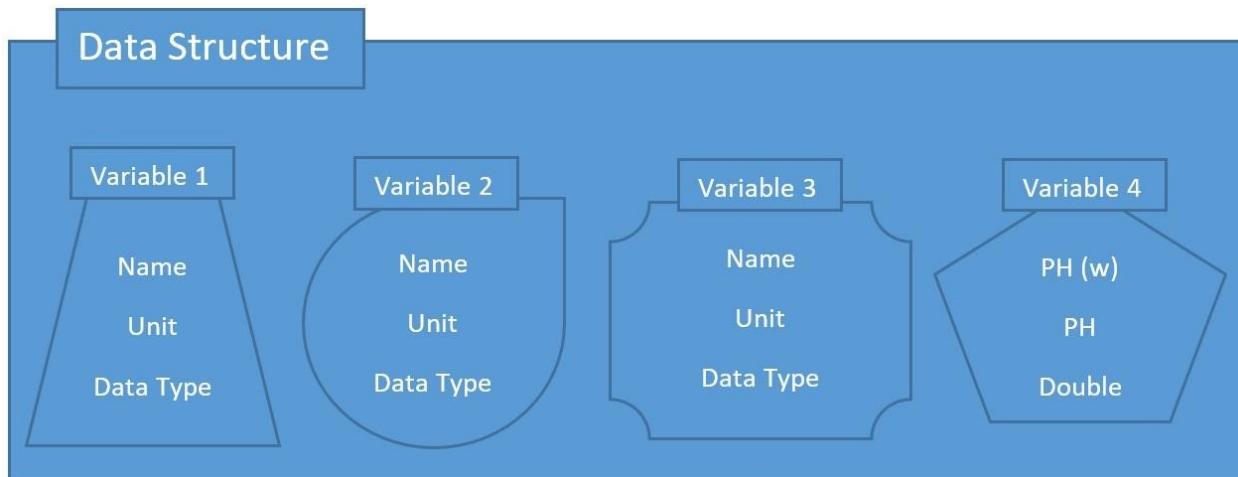
Each dataset may have an individual structure of "File" or "Tabular." A "File" Data Structure makes you able to store your files. The search engine of BEXIS 2 provides no indexing for such datasets, but the "Tabular." A "Tabular" Data Structure contains one or more Variables based on variable templates. Each variable has a unit of measurement, a data type, and a unique name. If the preferable unit of measure or data type does not exist, they must create at first.

One example of a **variable template** could be "Variable 4" in Figure 1. This variable could use for the measure of the acidity (PH). The unit would be "PH," and its data type is double (real number). The variable name is up to the user. It is "PH (w)" in this example.

You can edit a Data Structure later. Note that a Data Structure freezes once it connects to a dataset. You can create a copy of a data structure any time you want, modify, and associate it with a new dataset.

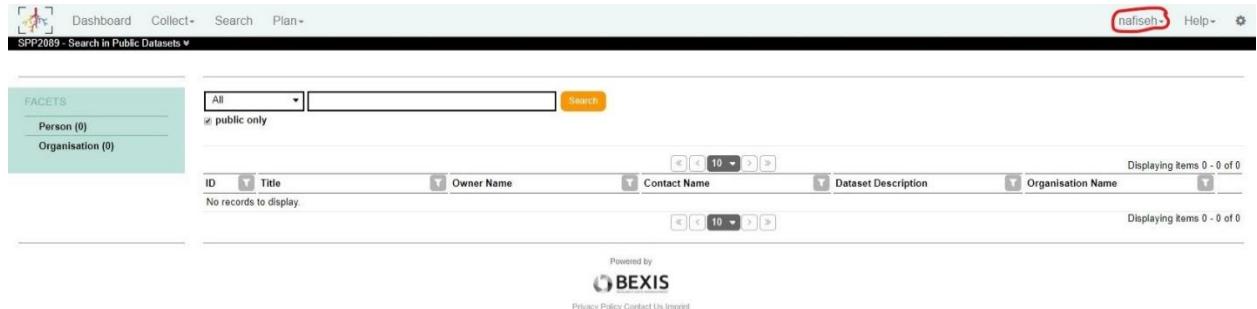
It makes sense to think about creating a Data Structure before collecting data.

Figure 1. The schema of a data structure



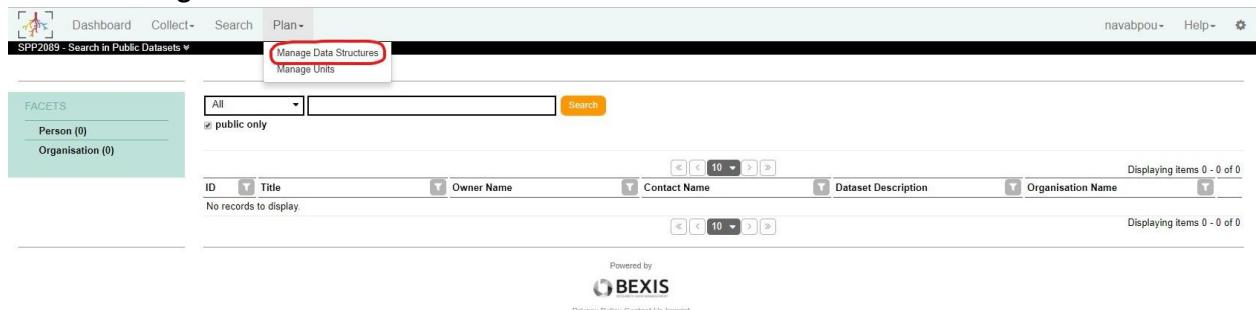
How do I create a Data Structure?

1. Be sure that you logged in. Check if your username is close to the **Help** menu item.



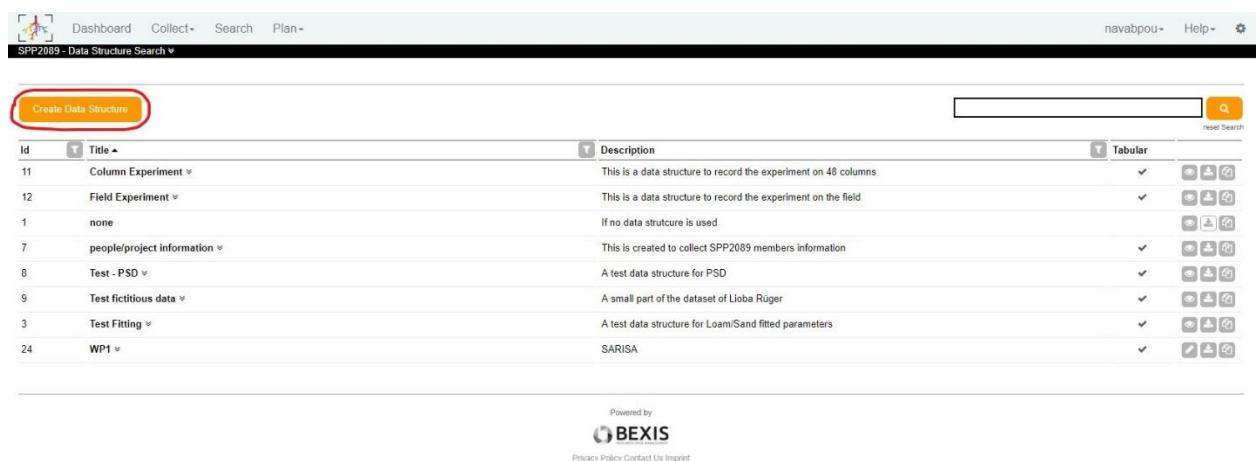
The screenshot shows the BEXIS 2 interface with a top navigation bar. The 'Help' menu item is circled in red. The main area displays a search interface for 'Public Datasets'. On the left, there is a 'FACETS' sidebar with 'Person (0)' and 'Organisation (0)' options. The main search area has a dropdown menu set to 'All', a search input field, and a 'Search' button. Below the search area is a table with columns: ID, Title, Owner Name, Contact Name, Dataset Description, and Organisation Name. The table shows 'No records to display.' and includes pagination controls (10, <<, >>) and links for 'Displaying items 0 - 0 of 0'. At the bottom, there is a footer with the BEXIS logo and links for 'Privacy Policy', 'Contact Us', and 'Imprint'.

2. Click on **Manage Data Structure** under the **Plan** menu item.



The screenshot shows the BEXIS 2 interface with a top navigation bar. The 'Plan' menu item is circled in red, and it has a dropdown menu with 'Manage Data Structures' and 'Manage Units' options. The main area is identical to the previous screenshot, showing the search interface for 'Public Datasets' with the 'Manage Data Structures' option highlighted in the dropdown.

3. Click on the **Create Data Structure** button in the following window.



The screenshot shows the 'Data Structure Search' window. The 'Create Data Structure' button is circled in red. The main area displays a table of data structures with columns: Id, Title, Description, and Tabular. The table includes rows for 'Column Experiment', 'Field Experiment', 'none', 'people/project information', 'Test - PSD', 'Test fictitious data', 'Test Fitting', and 'WP1'. Each row has a 'Tabular' checkbox and a set of icons for edit, delete, and preview. The footer includes the BEXIS logo and links for 'Privacy Policy', 'Contact Us', and 'Imprint'.

4. Enter a name and a descriptive description for your Data Structure in an opened modal window and click on the **Save** button.

Choose a **Data Format** compatible with your data structure. **Tabular** is a data table, and **File** is a non-structured data like images.

5. If you have created a Tabular data structure, BEXIS 2 refers you to the next page to build your data structure by adding variables.

Click on the right arrow closed to a variable template and add it to your data structure.

Searching, sorting, and filtering are available when you are looking for a variable template.

You can change the name of a variable in your Data Structure.

The optional variable means that the data table must not contain any data for this variable.

Click on the trash icon to delete the variable from your structure.

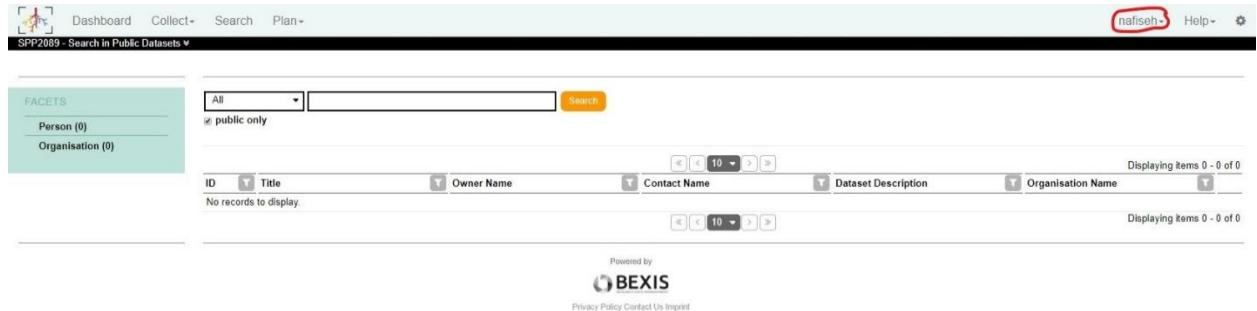
Click on the down arrows to have access to edit the description of a variable.

The screenshot shows the BEXIS 2 Data Structure Edit interface. On the left, there is a list of 'Variable Templates' with columns for Id, Name, Unit, and Data Type. A 'Create Variable Template' button is at the bottom. On the right, a 'Test Experiment (26)' is detailed with a 'Name' field ('Test Experiment'), a 'Description' field ('This is a Data Structure for a test experiment'), and a 'Variable Template' section. The 'Optional' checkbox for the 'remark' field is highlighted with a red circle. At the bottom are 'Save', 'Save as', and 'Cancel' buttons.

6. Click on the **Save** button to save the data structure.

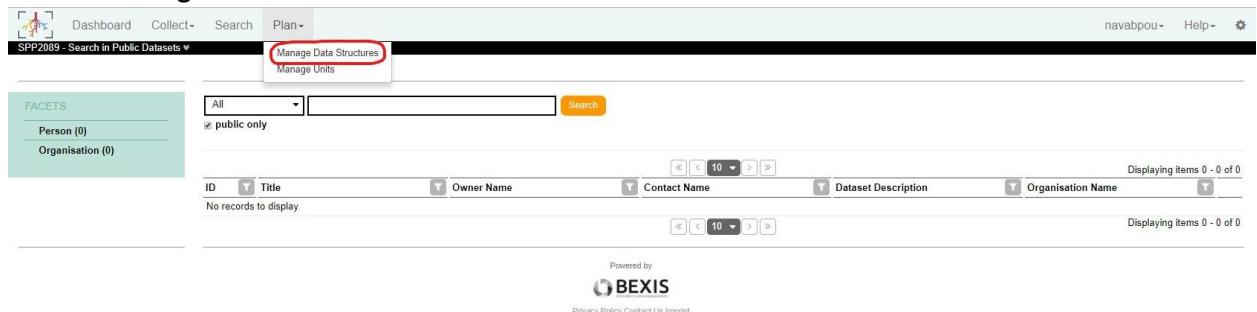
How do I edit a Data Structure?

1. Be sure that you logged in. Check if your username is close to the *Help* menu item.



The screenshot shows the BEXIS 2 interface with a top navigation bar. The 'Help' menu item is circled in red. Below the navigation, there is a search bar with a dropdown set to 'All' and a search button. To the left, a 'FACETS' sidebar shows 'Person (0)' and 'Organisation (0)'. The main content area displays a table with columns: ID, Title, Owner Name, Contact Name, Dataset Description, and Organisation Name. The table shows 'No records to display.' and has pagination controls for 10 items. The bottom of the page includes a footer with the BEXIS logo and links to Privacy Policy, Contact Us, and Imprint.

2. Click on **Manage Data Structure** under the **Plan** menu item.

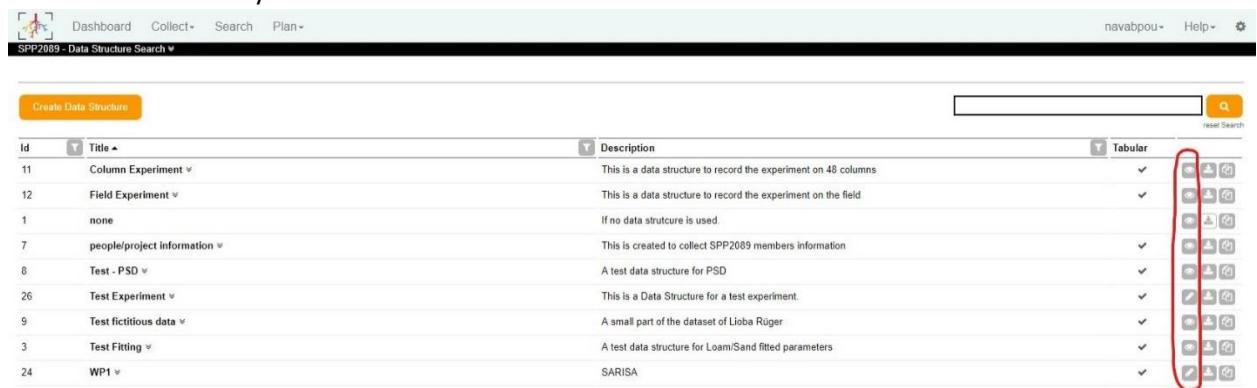


The screenshot shows the BEXIS 2 interface with a top navigation bar. The 'Plan' menu item is circled in red, and under it, the 'Manage Data Structures' option is highlighted. The rest of the interface is similar to the first screenshot, showing the search bar, facets sidebar, and table of data structures.

3. On the following page, you can see different buttons closed to data structures.

The **Eye** means that you can edit only the name and the description of a data structure.

The **Pen** means that you can edit the structure also.

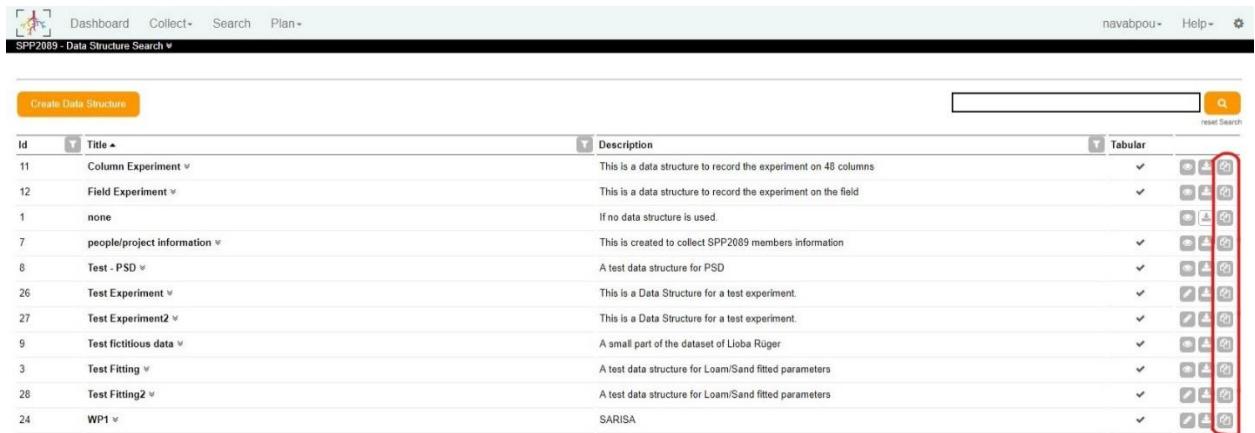


The screenshot shows the 'Data Structure Search' page. At the top, there is a search bar and a 'Create Data Structure' button. Below is a table with columns: Id, Title, Description, and Tabular. The table lists various data structures with their descriptions and edit icons. A red box highlights the edit icons in the last column.

Id	Title	Description	Tabular
11	Column Experiment	This is a data structure to record the experiment on 48 columns	
12	Field Experiment	This is a data structure to record the experiment on the field	
1	none	If no data structure is used	
7	people/project information	This is created to collect SPP2089 members information	
8	Test - PSD	A test data structure for PSD	
26	Test Experiment	This is a Data Structure for a test experiment.	
9	Test fictitious data	A small part of the dataset of Lioba Rüger	
3	Test Fitting	A test data structure for LoamSand fitted parameters	
24	WP1	SARISA	

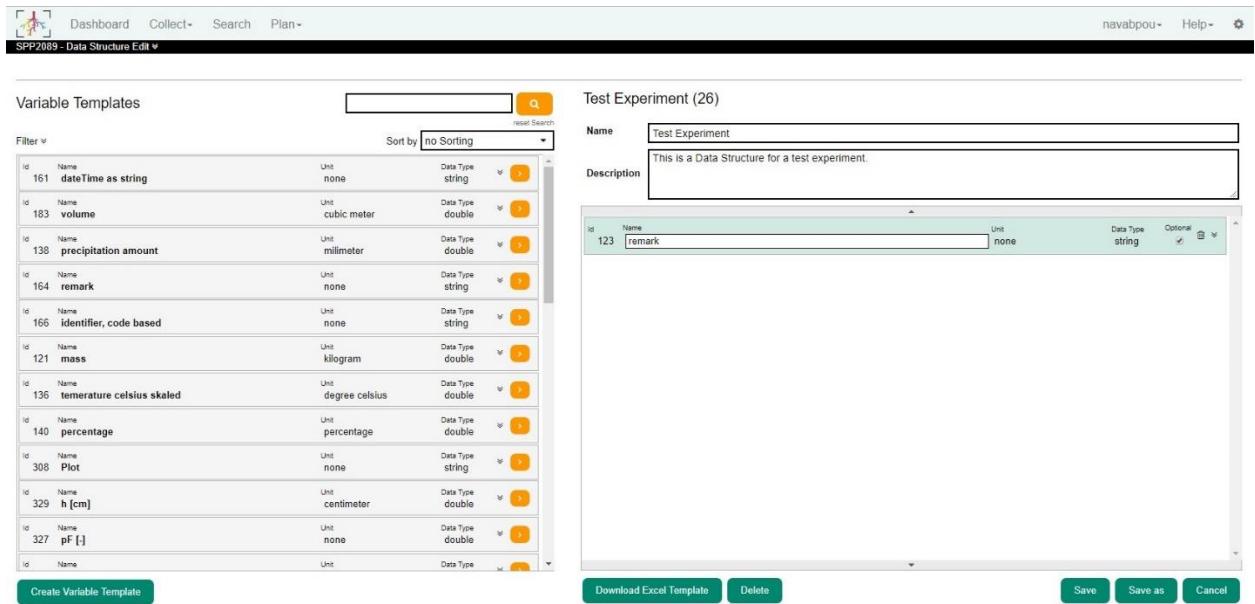
Note: A data structure is not editable when it connects to a dataset.

Clicking the **Copy Data Structure** button next to a data structure creates a copy of the data structure. You should just change the name to be unique.



Create Data Structure			
Id	Title	Description	Tabular
11	Column Experiment	This is a data structure to record the experiment on 48 columns	<input checked="" type="checkbox"/>
12	Field Experiment	This is a data structure to record the experiment on the field	<input checked="" type="checkbox"/>
1	none	If no data structure is used.	
7	people/project information	This is created to collect SPP2089 members information	<input checked="" type="checkbox"/>
8	Test - PSD	A test data structure for PSD	<input checked="" type="checkbox"/>
26	Test Experiment	This is a Data Structure for a test experiment.	<input checked="" type="checkbox"/>
27	Test Experiment2	This is a Data Structure for a test experiment.	<input checked="" type="checkbox"/>
9	Test fictitious data	A small part of the dataset of Loba Rüger	<input checked="" type="checkbox"/>
3	Test Fitting	A test data structure for Loam/Sand fitted parameters	<input checked="" type="checkbox"/>
28	Test Fitting2	A test data structure for Loam/Sand fitted parameters	<input checked="" type="checkbox"/>
24	WP1	SARISA	<input checked="" type="checkbox"/>

4. Edit the data structure and click on the **Save** button.



Variable Templates

Id	Name	Unit	Data Type
161	dateTime as string	none	string
183	volume	cubic meter	double
138	precipitation amount	millimeter	double
164	remark	none	string
166	identifier, code based	none	string
121	mass	kilogram	double
136	temperatur celsius scaled	degree celsius	double
140	percentage	percentage	double
308	Plot	none	string
329	h [cm]	centimeter	double
327	pf [-]	none	double
		Unit	Data Type

Test Experiment (26)

Name: Test Experiment

Description: This is a Data Structure for a test experiment.

Variable Template:

123	Name: remark	Unit: none	Data Type: string	Optional: <input checked="" type="checkbox"/>
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Buttons: Create Variable Template, Download Excel Template, Delete, Save, Save as, Cancel

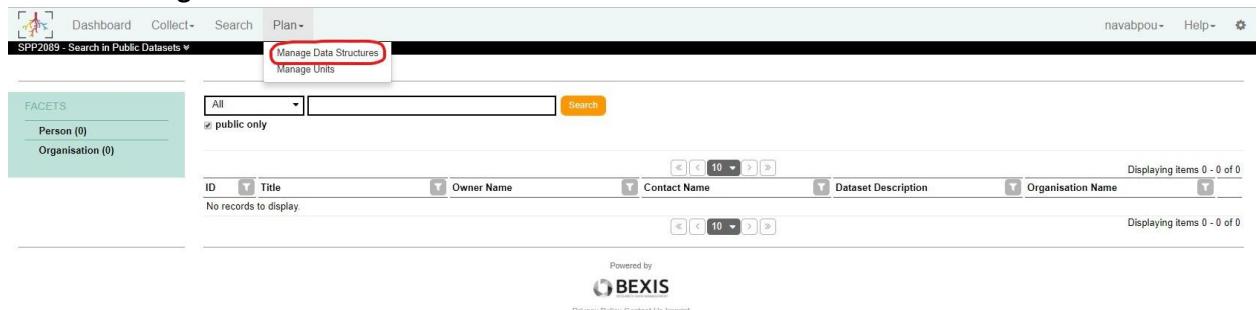
How do I download a Data Structure?

1. Be sure that you logged in. Check if your username is close to the **Help** menu item.



The screenshot shows the BEXIS 2 interface with a top navigation bar. The 'Help' menu item is circled in red. The main area displays a search interface with facets for 'Person (0)' and 'Organisation (0)'. A search bar shows 'All' and a 'Search' button. Below the search bar is a table header with columns: ID, Title, Owner Name, Contact Name, Dataset Description, and Organisation Name. The table body shows 'No records to display.' and 'Displaying items 0 - 0 of 0'. The footer includes the BEXIS logo and links to Privacy Policy, Contact Us, and Imprint.

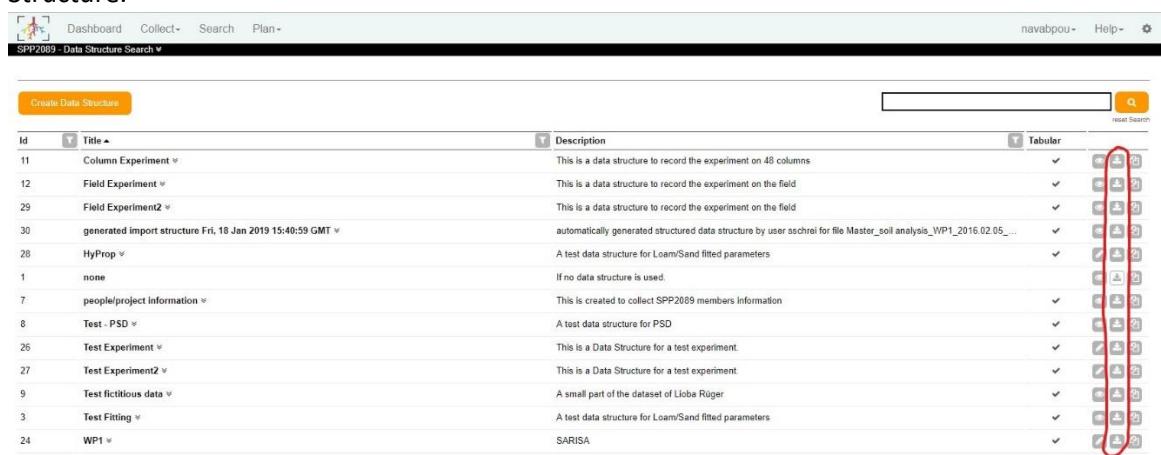
2. Click on **Manage Data Structure** under the **Plan** menu item.



The screenshot shows the BEXIS 2 interface with a top navigation bar. The 'Plan' menu item is circled in red, and the 'Manage Data Structures' option is highlighted. The main area displays a search interface with facets for 'Person (0)' and 'Organisation (0)'. A search bar shows 'All' and a 'Search' button. Below the search bar is a table header with columns: ID, Title, Owner Name, Contact Name, Dataset Description, and Organisation Name. The table body shows 'No records to display.' and 'Displaying items 0 - 0 of 0'. The footer includes the BEXIS logo and links to Privacy Policy, Contact Us, and Imprint.

3. You can download a Data Structure in two ways.

- a. On the page Data Structure management, click on the **Download** button next to a Data Structure.



The screenshot shows the 'Data Structure management' page. At the top is a 'Create Data Structure' button and a search bar. The main area is a table with columns: Id, Title, Description, and Tabular. The table lists various data structures with their descriptions and download buttons. A red box highlights the download buttons for several entries.

Id	Title	Description	Tabular
11	Column Experiment	This is a data structure to record the experiment on 48 columns	<input checked="" type="checkbox"/>
12	Field Experiment	This is a data structure to record the experiment on the field	<input checked="" type="checkbox"/>
29	Field Experiment2	This is a data structure to record the experiment on the field	<input checked="" type="checkbox"/>
30	generated import structure Fri, 18 Jan 2019 15:40:59 GMT	automatically generated structured data structure by user aschrei for file Master_soil analysis_WP1_2016.02.05...	<input checked="" type="checkbox"/>
28	HyProp	A test data structure for Loam/Sand fitted parameters	<input checked="" type="checkbox"/>
1	none	If no data structure is used.	<input checked="" type="checkbox"/>
7	people/project information	This is created to collect SPP2089 members information	<input checked="" type="checkbox"/>
8	Test - PSD	A test data structure for PSD	<input checked="" type="checkbox"/>
26	Test Experiment	This is a Data Structure for a test experiment.	<input checked="" type="checkbox"/>
27	Test Experiment2	This is a Data Structure for a test experiment.	<input checked="" type="checkbox"/>
9	Test fictitious data	A small part of the dataset of Lieba Röger	<input checked="" type="checkbox"/>
3	Test Fitting	A test data structure for Loam/Sand fitted parameters	<input checked="" type="checkbox"/>
24	WP1	SARISA	<input checked="" type="checkbox"/>

- b. On the Edit Data Structure page, click the **Download Excel Template** button. BEXIS 2 creates an Excel Template from the current Data Structure.

The screenshot shows the BEXIS 2 Data Structure Edit interface. On the left, there is a list of 'Variable Templates' with columns for ID, Name, Unit, Data Type, and Optional status. On the right, there is a detailed view of a 'Field Experiment' structure with 12 fields, each with its own ID, Name, Unit, Data Type, and Optional status. Buttons for 'Download Excel Template', 'Delete', 'Save', 'Save as', and 'Cancel' are visible at the bottom.

Variable Template	Name	Unit	Data Type	Optional
161	dateTime as string	none	string	✓
183	volume	cubic meter	double	✓
138	precipitation amount	millimeter	double	✓
121	mass	kilogram	double	✓
136	temperature celsius scaled	degree celsius	double	✓
164	remark	none	string	✓
166	identifier, code based	none	string	✓
140	percentage	percentage	double	✓
308	Plot	none	string	✓
329	h [cm]	centimeter	double	✓
327	pF []	none	double	✓
	Name	Unit	Data Type	

Field Experiment (12)			
Name Field Experiment			
Description This is a data structure to record the experiment on the field			
Field Experiment Fields			
58 ID	Unit none	Data Type integer	Optional ✓
59 Column Number	Unit none	Data Type string	Optional ✓
60 substrate	Unit none	Data Type string	Optional ✓
61 genotype	Unit none	Data Type string	Optional ✓
62 replicates	Unit none	Data Type string	Optional ✓
68 Treatment	Unit none	Data Type string	Optional ✓
64 DEPTH	Unit none	Data Type string	Optional ✓
65 C-total (g/kg)	Unit gram kilogram ratio	Data Type double	Optional ✓
66 N-total (g/kg)	Unit gram kilogram ratio	Data Type double	Optional ✓

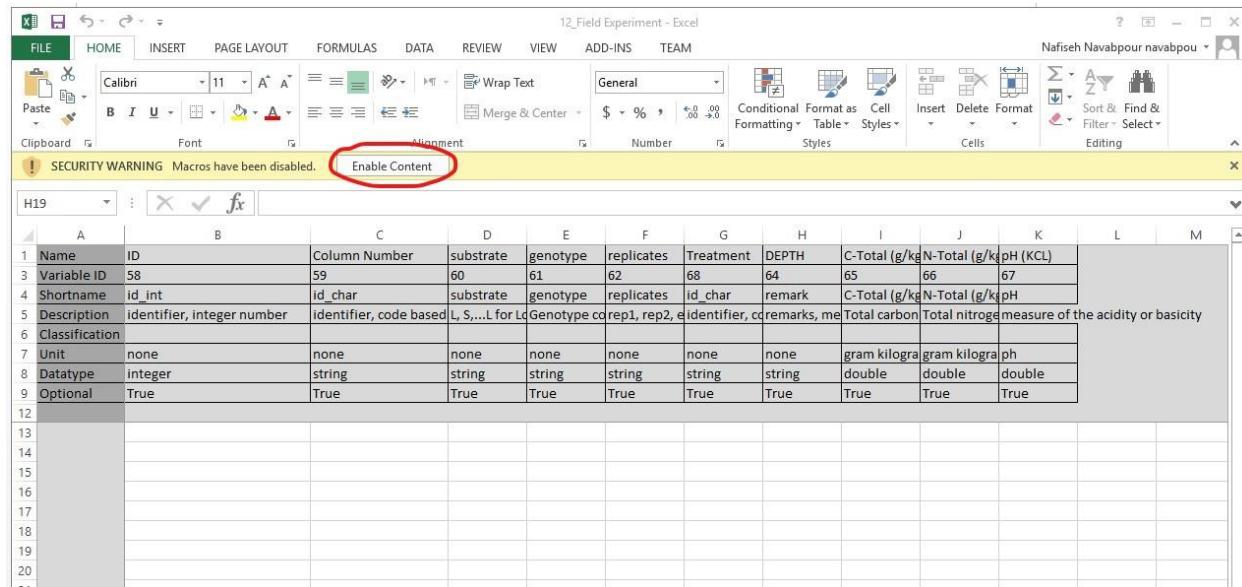
Save the Excel Template to your preferred location on your computer.

How do I work with an Excel Template?

BEXIS 2 provides an Excel file based on a Data structure that contains information about data attributes. This file uses macros to examine the quality of the data values based on the data type.

Enable macros

To work with an Excel Template, You must first enable macros. Macros automate frequently-used tasks, in our case, quality control of the data table. Enabling or disabling macros varies depending on the version of Microsoft you are using. **Macro security settings**, generally located in the *Trust Center*.



12_Field Experiment - Excel												
Nafiseh Navabpour navabpou												
FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW ADD-INS TEAM												
Paste	Font	Clipboard	Wrap Text	General	Conditional Formatting	Format as Table	Cell Styles	Insert	Delete	Format	Cells	Editing
Font	Font	Font	Font	Number	Number	Number	Number	Number	Number	Number	Number	Number
1 Name	ID	Column Number	substrate	genotype	replicates	Treatment	DEPTH	C-Total (g/kg)	N-Total (g/kg)	pH (KCL)		
3 Variable ID	58	59	60	61	62	68	64	65	66	67		
4 Shortname	id_int	id_char	substrate	genotype	replicates	id_char	remark	C-Total (g/kg)	N-Total (g/kg)	pH		
5 Description	identifier, integer number	identifier, code based	L, S,...L for Lo	Genotype co	rep1, rep2, et	identifier, coremarks, me	Total carbon	Total nitrogen	measure of the acidity or basicity			
6 Classification												
7 Unit	none	none	none	none	none	none	none	gram kilogra	gram kilogra	ph		
8 Datatype	integer	string	string	string	string	string	string	double	double	double		
9 Optional	True	True	True	True	True	True	True	True	True	True		
12												
13												
14												
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37												

Quality control

A	B	C	D	E	F	G	H
1 Name	ID	Column Number	substrate	genotype	replicates	Biomass (g/cm)	
3 Variable ID	52	53	54	55	56	57	
4 Shortname	id_int	id_char	substrate	genotype	replicates	Biomass	
5 Description	identifier, integer number	identifier, code based	L, S,...L for Lo	Genotype co	rep1, rep2, et	Biomass measures in gram.	
6 Classification							
7 Unit	none	none	none	none	none	per centimeter	
8 Datatype	integer	string	string	string	string	double	
9 Optional	True	True	True	True	True	True	
12							
13	C13	L	wt	rep1	Text for test		
14	C14	L	wt	rep2	Text for test		
15	C15	L	wt	rep3	Text for test		
16	C16	L	wt	rep4	Text for test		
17	C17	L	wt	rep5	Text for test		
18	C18	L	wt	rep6	Text for test		
19	C19	L	rth3	rep1	Text for test		
20	C20	L	rth3	rep2	Text for test		
21	C21	L	rth3	rep3	Text for test		
22	C22	L	rth3	rep4	Text for test		
23	C23	L	rth3	rep5	1.00		
24	C24	L	rth3	rep6	1.00		
25	C25	S	wt	rep1	1.00		

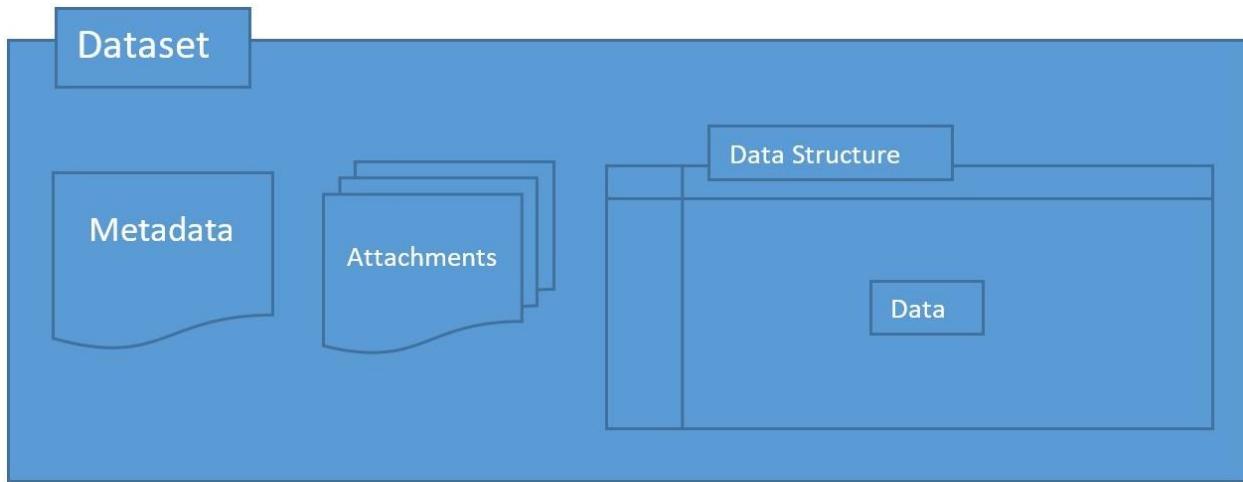
Excel template controls the data type of data values. This file warns you by reddening a data cell if you enter a text in a column that is assigned a numeric value. To check if your data is suitable to upload, copy your data into the Excel template, and look for red cells. If a cell is highlighted in red, you must make changes in your data structure. The data type of the variable should be changed compatible with your data. To edit the data structure, see [How do I edit a Data Structure?](#)

What does a Dataset mean?

A dataset may be anything from a single record up to a collection of millions of records and multiple variables.

Each dataset may have an individual structure given by the number of variables and their properties.

In BEXIS 2, data is stored and managed as part of a dataset.



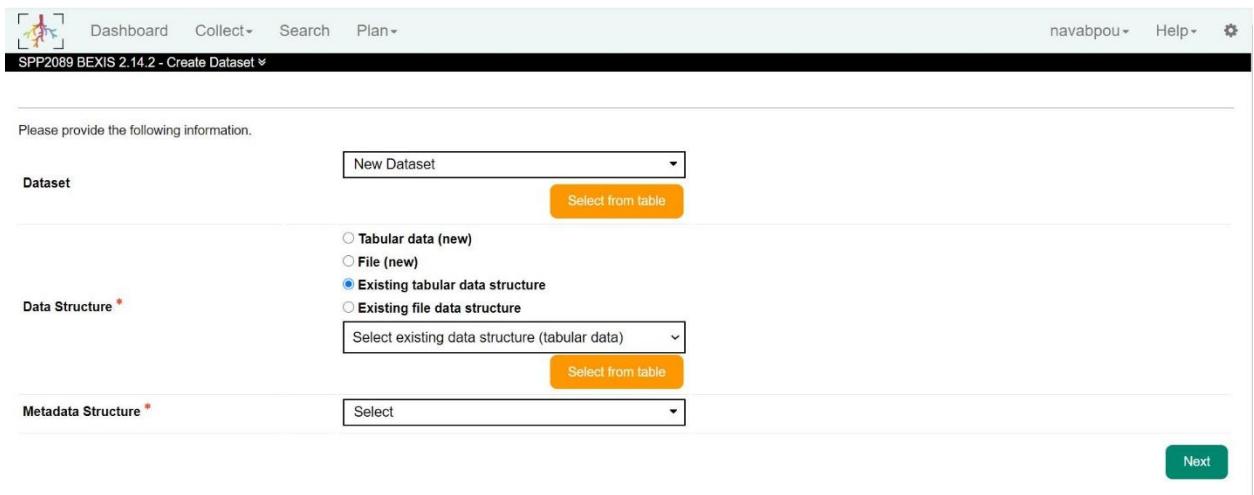
How do I create a Dataset?

1. Be sure that you logged in. Check if your username is close to the *Help* menu item.

2. Click on the **Create Dataset** under the **Collect** menu item.

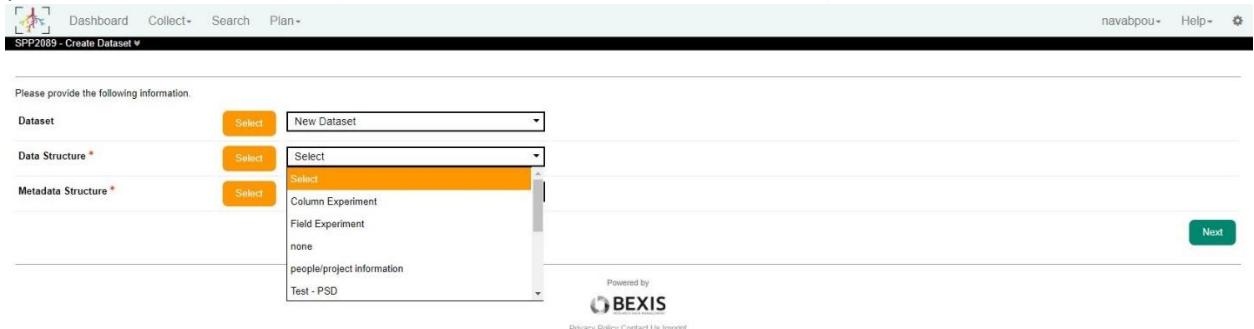
3. On this page, select a **new Dataset** if you want to create a new dataset or select an **existing dataset** in the dataset field to copy a current dataset's metadata.

4. Select "Existing tabular data structure."



The screenshot shows the 'Create Dataset' interface. The 'Dataset' dropdown is set to 'New Dataset'. The 'Data Structure' dropdown is set to 'Existing tabular data structure'. The 'Metadata Structure' dropdown is set to 'Select'. A 'Next' button is visible on the right.

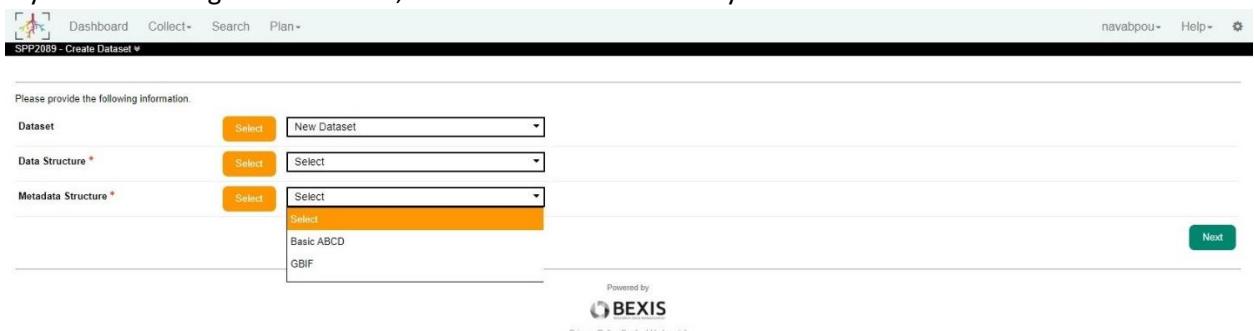
5. Select an existing **Data Structure** for your data table. If you do not yet create a data structure for your data table, create one (check the introduction of Data Structure).



The screenshot shows the 'Create Dataset' interface. The 'Dataset' dropdown is set to 'Selected'. The 'Data Structure' dropdown is set to 'Select'. The 'Metadata Structure' dropdown is set to 'Select'. A dropdown menu is open for 'Data Structure', showing options: 'Select', 'Column Experiment', 'Field Experiment', 'none', 'people/project information', and 'Test - PSD'. A 'Next' button is visible on the right.

6. Select a **Metadata Structure**.

In case you select a copy of another dataset, the metadata structure is pre-selected. If you are creating a new dataset, the **SPP 2089 Metadata** is your choice.



The screenshot shows the 'Create Dataset' interface. The 'Dataset' dropdown is set to 'Selected'. The 'Data Structure' dropdown is set to 'Select'. The 'Metadata Structure' dropdown is set to 'Select'. A dropdown menu is open for 'Metadata Structure', showing options: 'Select', 'Basic ABCD', and 'GBIF'. A 'Next' button is visible on the right.

Click on the **Next** button, and BEXIS 2 refers you to the Metadata Formula.

7. Fill at least the following fields in the ABCD metadata formula and click on the **Save** button.

- General > Title
- General > Short description
- General > Data Owner
- Contact Person > Name

* Title	<input type="text"/>
* Short description	<input type="text"/>
Sppproject number	Select, please <input type="button" value="▼"/>
* Data owner	<input type="text"/>
Last modification	<input type="text"/> <input type="button" value="calendar"/>
Remark	<input type="text"/>
* Name	<input type="text"/>
Email	<input type="text"/>
Institution	<input type="text"/>
Dataset status	Select, please <input type="button" value="▼"/>
Remark	<input type="text"/>
Missing value	<input type="text"/>
Data origin	Select, please <input type="button" value="▼"/>
Sampling date	Select, please <input type="button" value="▼"/>
Remark	<input type="text"/>
Method	<input type="text"/>
Instrument	<input type="text"/>
Remark	<input type="text"/>

Please note that

- Please change the title when copying a dataset.
- Do not enter a duplicate title.

- A field marked with a **red star** is mandatory.
- You can ignore the warning message if some mandatory fields are empty and create your data set. Your metadata is not valid in this case, and your dataset will show red on your dashboard.
- You can later **edit** a metadata formula.
- Please ignore the red stars in the name of field groups.
- To open an infobox, mark the small square on the right. Then you see more fields underneath.

Dataset security: Who can see my dataset?

The person who has created the dataset can control who sees the data. Your dataset is hidden from public view. Only people that are registered in the same BEXIS 2 platform can find your dataset from the search page, but they cannot see the data. All BEXIS 2 users can see the metadata and data structure of all datasets uploaded. But nobody can see your primary data until you give them read permission.

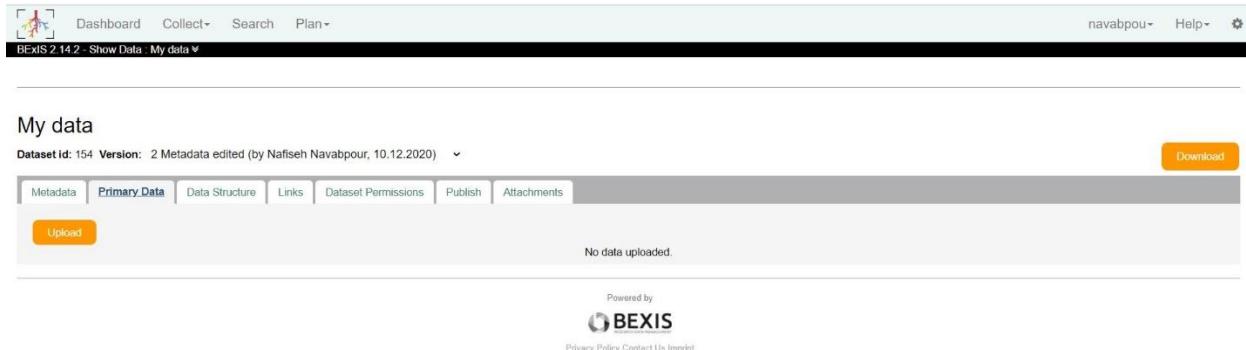
1. Open the dataset detail view.
2. Open the **Dataset Permissions** tab.
3. Find the user by username or id.
4. Permit with a checkmark.
 - a. **Read** means the user can download data.
 - b. **Write** means the user can edit the dataset.
 - c. Ignore the *Delete* and *Grant* options.

Note: The group **SPP2089** contains all colleagues from SPP 2089. If you want to set permissions for all SPP 2089 members, it is sufficient to only set permissions for the group SPP2089.

How do I upload data to a dataset?

You can upload your **Primary Data** in BEXIS 2 only into an existing dataset. If you did not yet create a dataset, see [How do I create a Dataset?](#)

After creating a dataset, you will upload your data table or files directly through the **Primary data** tab in the dataset details view.



My data

Dataset Id: 154 Version: 2 Metadata edited (by Nafiseh Navabpour, 10.12.2020)

Download

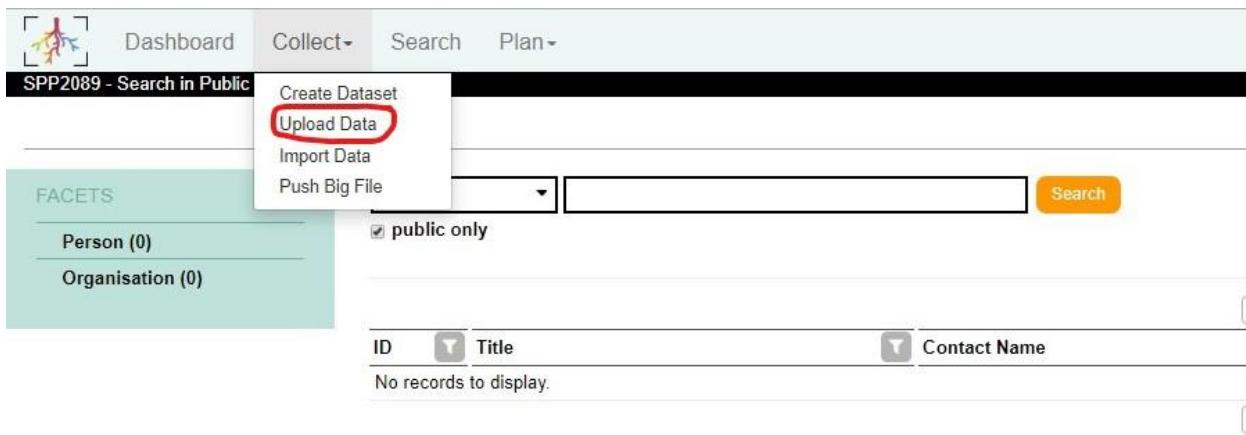
Metadata Primary Data Data Structure Links Dataset Permissions Publish Attachments

Upload

No data uploaded.

Powered by
BEXIS
Privacy Policy Contact Us Imprint

Another way to upload data is by clicking on **Upload Data** under the **Collect** menu item.



Dashboard Collect Search Plan

SPP2089 - Search in Public

Create Dataset

Upload Data

Import Data

Push Big File

Person (0)

Organisation (0)

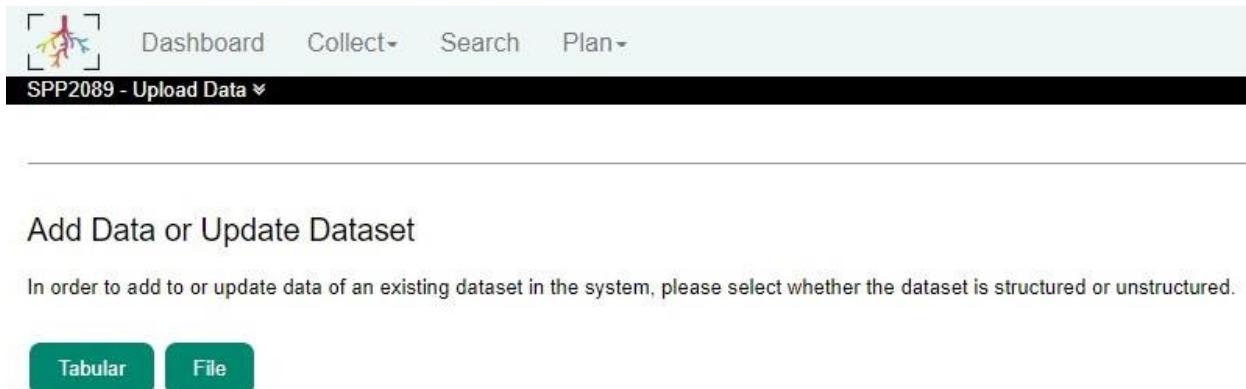
public only

ID Title Contact Name

No records to display.

Search

Regarding the type of your data structure, you should choose whether your dataset is a data table or a non-structure file. If you upload data via the Upload Data Wizard, the system jumps up from this step.



Dashboard Collect Search Plan

SPP2089 - Upload Data

Add Data or Update Dataset

In order to add to or update data of an existing dataset in the system, please select whether the dataset is structured or unstructured.

Tabular File

Upload Data – File format

If you save your data as a **File**, the search engine could not find the data.

BEXIS 2 accepts only defined file formats under 1GB.

1. Select your file and click on the **Next** button.

Select File

Specify Dataset

Summary

Select File

Please select a data file to be uploaded to the system.

Note: Large data files may take several minutes or hours to transfer, depending on your network speed. The system is freezed until the file has been transferred completely. Please be patient!

For multiple large files you may use the "Push Big Data to Server" option before entering this Upload Wizard.

Supported file formats: (*.avi) (*.bmp) (*.csv) (*.dbf) (*.doc) (*.docx) (*.gif) (*.jpg) (*.jpeg) (*.mp3) (*.mp4) (*.pdf) (*.png) (*.shp) (*.shx) (*.tif) (*.txt) (*.xls) (*.xlsm) (*.xlsx) (*.xsd) (*.zip)

Maximum file size: 1024 MB

Select...

Select a data file from your local computer.

Select, please

Select a data file previously uploaded to the server.

2. Select an existing Dataset and click on the **Next** button. Note that the dataset is pre-selected through the Upload Data wizard.

Select File

Specify Dataset

Summary

Specify Dataset

Your data is stored and managed as part of a dataset.

A dataset may contain one or more of your data files. But all data files within one dataset must be of the same data structure, i.e. in structured datasets the number of variables and their properties must be identical in each file.

Select

Select an existing dataset to attach your file with.

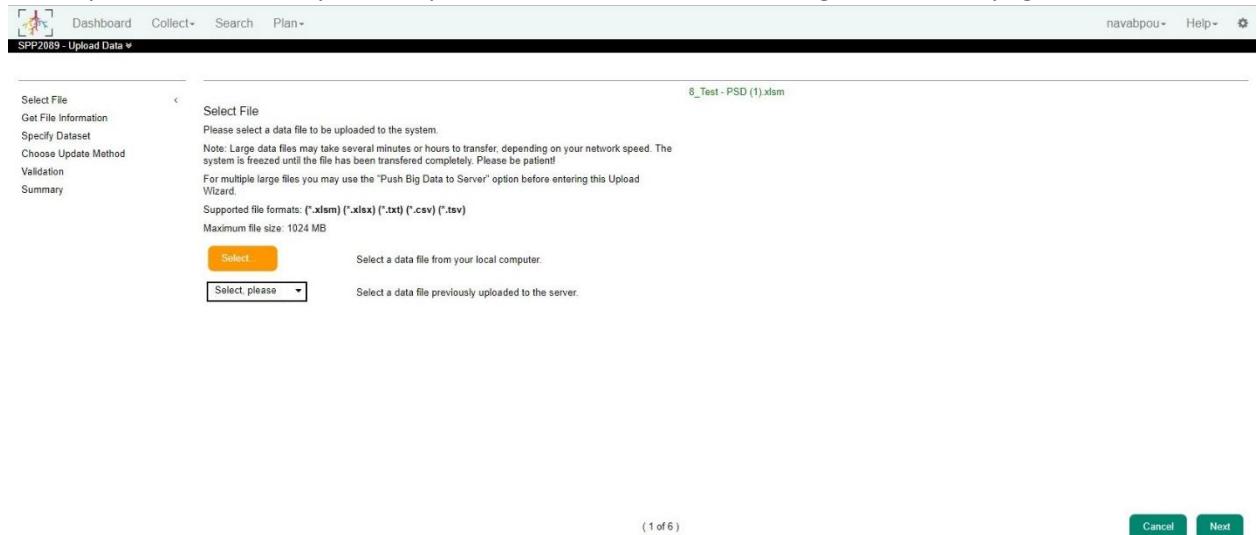
3. The system will show you a summary of your upload on the next page, and the upload process will finish.
4. Click the **Finish** button. BEXIS 2 refers to the **Dataset View**.

Upload Data – Tabular format

Tabular data is structured data. BEXIS 2 accepts the file formats **XLSM**, **XLSX**, **TXT**, **CSV**, and **TSV** in this process. **Upload data in XSLM format is recommended.** XSLM is an Excel template provided by BEXIS 2. To get an Excel template, see [How do I download a Data Structure?](#)

You need to copy your data into the Excel template and then upload it. See [How do I work with an Excel Template?](#)

1. Select your data file from your computer. Click the Next button and go to the next page.



The screenshot shows the 'Upload Data' interface for Tabular format. The main area is titled 'Select File' with a note: 'Please select a data file to be uploaded to the system. Note: Large data files may take several minutes or hours to transfer, depending on your network speed. The system is freezed until the file has been transferred completely. Please be patient! For multiple large files you may use the "Push Big Data to Server" option before entering this Upload Wizard.' It specifies supported file formats: (*.xslm) (*.xlsx) (*.txt) (*.csv) (*.tsv) and a maximum file size of 1024 MB. Below this are two buttons: 'Select' (orange) and 'Select, please' (dropdown). The bottom right of the main area has buttons for 'Cancel' and 'Next'.

2. This page calls **Get File Information**, and it differs depending on the file format.

Upload BEXIS 2 Excel Template (.XLSM)

If you are working with the **Excel template**, the procedure gets information automatically from the Excel template.

Upload regular Excel file (.xlsx)

If you have selected a regular Excel file in .xlsx format, the system will point you to a page where you can see your data table. You can change the Excel worksheet if you need it.

On this page, you must specify where your column headers (variable names), and where your data are.

Get File Information

Header Data Expand Selection Reset Data Change Worksheet

A	B	C	D	E	F	G	H	I
1 ID	Column Number	substrate	genotype	replicates	Treatment	DEPTH	C-Total (g/kg)	N-Tot (g/kg)
2						cm	g/kg	g/kg
3								
4	FP02	L	WT	REP2	FP02_L_WT REP2	5-10		
5	FP03	L	WT	REP3	FP03_L_WT REP3	5-10		
6	FP04	L	WT	REP4	FP04_L_WT REP4	5-10		
7	FP05	L	WT	REP5	FP05_L_WT REP5	5-10		
8	FP06	L	WT	REP6	FP06_L_WT REP6	5-10		
9	FP07	L	RTH	REP1	FP07_L_RTH REP1	5-10		
10	FP08	L	RTH	REP2	FP08_L_RTH REP2	5-10		
11	FP09	L	RTH3	REP3	FP09_L_RTH3 REP3	5-10		
12	FP10	L	RTH3	REP4	FP10_L_RTH3 REP4	5-10		
13	FP11	L	RTH3	REP5	FP11_L_RTH3 REP5	5-10		
14	FP12	L	RTH3	REP6	FP12_L_RTH3 REP6	5-10		
15	FP13	S	WT	REP1	FP13_S_WT REP1	5-10		
16	FP14	S	WT	REP2	FP14_S_WT REP2	5-10		

Prev (2 of 6) Next

- First, select all variables with the left click on the mouse. Then click on the **Header** button.
- Select all data in the same way and click the **Data** button.
- The **Expand Selection** button allows you to expand your selection. If the data table contains many rows, select only the first row of data and click the Expand Selection. The system determines all data to the end.
- Click the **Reset** button if you need to reset your selection.

Get File Information

Header Data Expand Selection Reset Data Change Worksheet

A	B	C	D	E	F	G	H	I	J
1 ID	Column Number	substrate	genotype	replicates	Treatment	DEPTH	C-Total (g/kg)	N-Tot (g/kg)	pH
2						cm	g/kg	g/kg	
3	FP02	FP02	FP02	FP02	FP02	FP02	FP02	FP02	pH
4	FP02	FP02	FP02	FP02	FP02	FP02	FP02	FP02	
5	FP02	FP02	FP02	FP02	FP02	FP02	FP02	FP02	
6	FP02	FP02	FP02	FP02	FP02	FP02	FP02	FP02	
7	FP02	FP02	FP02	FP02	FP02	FP02	FP02	FP02	
8	FP02	FP02	FP02	FP02	FP02	FP02	FP02	FP02	
9	FP02	FP02	FP02	FP02	FP02	FP02	FP02	FP02	
10	FP02	FP02	FP02	FP02	FP02	FP02	FP02	FP02	
11	FP02	FP02	FP02	FP02	FP02	FP02	FP02	FP02	
12	FP02	FP02	FP02	FP02	FP02	FP02	FP02	FP02	
13	FP02	FP02	FP02	FP02	FP02	FP02	FP02	FP02	
14	FP02	FP02	FP02	FP02	FP02	FP02	FP02	FP02	
15	FP02	FP02	FP02	FP02	FP02	FP02	FP02	FP02	

Prev (2 of 6) Next

If you are sure that the header and data are selected, click the **Next** button and go to the next step.

Upload normal Text file (.TXT, .CSV or .TSV)

If your data is in a TXT, CSV, or TSV format, the system will ask for the following information.

- Separator:** Is your data separated by a tab, comma, semicolon, or space?
- Decimal:** Have your real data been specified as 3.02 with a dot (point) or 3,02 with a comma?
- TextMarker:** Did you use quotes or double quotes as text markers?

- **Orientation:** At this point, you must specify whether your data is column-wise or row-wise.
 - Data is column-wise when data related to a variable is written to a column.
 - Data is row-wise when data related to a variable is written to a row.
- **Offset:** How many empty columns (in column-wise) or rows (in row-wise) before the variables are specified.
- **Variables:** Row (in column-wise) or column (in row-wise) in which the variables are located.
- **Data:** Row (in column-wise) or column (in row-wise) in which the data starts.

Get File Information

Separator: tab

Decimal: point

TextMarker: quotes

Orientation: columnwise

Offset: 0

Variables: 1

Data: 2

Prev (2 of 6) Next Cancel

Click on the **Next** button and go to the next page.

3. Specify the dataset if it is not specified by default. Click on the **Next** button and go to the next page.

You have selected Dataset: P01_SPE_20181206_24

Specify Dataset

Your data is stored and managed as part of a dataset.

A dataset may contain one or more of your data files. But all data files within one dataset must be of the same data structure, i.e. in structured datasets the number of variables and their properties must be identical in each file.

(53) P01_SPE_20181206_24

Select an existing dataset to attach your file with.

Prev (3 of 6) Next Cancel

4. In this step, BEXIS 2 checks if your data table is compatible with the data structure. Click on the **Validate** button. In mismatches, red messages will display on the right side, and the process will

terminate there. If data in the data structure can fit well, a green message will sound, and you can go to the next page.

Validation

With this step the selected data file is validated against the selected data structure. Both, the structure of the data (e.g. variable properties) and whether the data values fit to the specified structure (e.g. data type, value range) is evaluated.

Validate Validate selected data file against a given data structure.

Prev (5 of 6) Next

If you have received a red error message at the validation step, one of the following problems is possible.

- The number of columns in your table is not the same size as the data structure.
- The column names are not the same.
- Data values do not match the defined data types.

If you cannot solve the problem, the best way is to download the Excel template, copy data into this file, and upload it.

5. On the last page, the upload process will finish, and you will see a summary of your upload data.
6. Click the **Finish** button. BEXIS 2 refers to the **Dataset View**.

Note: You will see your data in the **Primary Data** tab. Please don't worry if you see the red message, "No data is uploaded to this dataset." Your upload must maintain in the background. Just contact your data manager (nafiseh.navabpour@ufz.de).

test

Dataset Id: 90, Version: 2

Download Dataset

Metadata	Primary Data	Data Structure	Dataset Permissions	Publish	Attachments
•	No data is uploaded to this dataset.				

Why is only one row uploaded?

If you use an Excel template, Excel's macro functions are needed to perform the entered data validation. If the macros are not activated, the Excel table specifies only the first row as data. Enabling the macros after entering the data does not help.

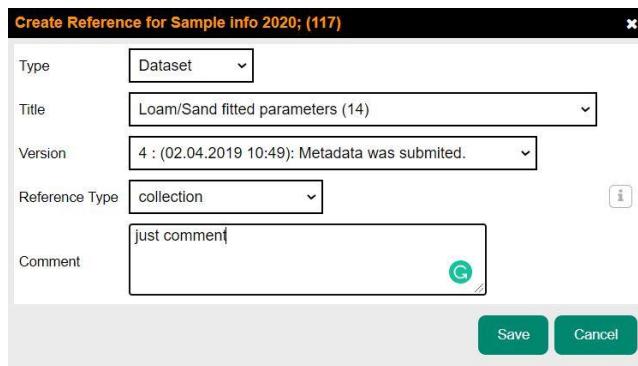
Open the BEXIS 2 Excel Template again. First, activate the macros, copy the data, and save it.

How do I delete a dataset?

You are not able to delete a dataset by yourself in BEXIS 2. Please send the id and the name of a dataset that you want to delete to the BEXIS 2 platform manager (nafiseh.navabpour@ufz.de). The dataset will remove very soon.

How do I link datasets?

Through the tab "Link," you can specify the relationship between datasets. Create link opens a modal window.



The screenshot shows a modal window titled "Create Reference for Sample info 2020: (117)". The window contains the following fields:

- Type: Dataset
- Title: Loam/Sand fitted parameters (14)
- Version: 4 : (02.04.2019 10:49): Metadata was submitted.
- Reference Type: collection
- Comment: just comment

At the bottom right are "Save" and "Cancel" buttons.

- Select *Dataset* as Type.
- Select the dataset that you want to create a relationship with it.
- Select the latest version.
- Choose a *reference type*.
- Enter a note.

You can choose a reference type from the following options.

- Collection
- Based on
- Child of
- Parent of
- Link

I try to clarify each option with an example.

Collection: Suppose you perform a similar experiment in the laboratory and the field (such as soil nitrogen content). The data structure you create for each experiment is different. So you can not upload both results in one dataset. You need to create two datasets for one project that are in a *collection*.

Based on: Suppose you collected raw data from an experiment (like the previous example). You analyzed the data and want to upload the result into BEXIS 2. The dataset, which is created to upload the analysis work, is *based on* the dataset containing raw data.

Parent / Child: If you decide to provide a dataset that includes different datasets, you have parents and children. For example, if you combine the results of your experiments in the lab and on the field:

- the lab experiment and the field experiment are children of the combination.
- The combined dataset is the parent of both experiments.

Link: Datasets from a project that they are not fit in other types are linked together.

Another example can explain these reference types. We have two datasets contains weather data of Badlauchstädt from DWD and BOSYS station. The two datasets are in a **collection** because they are the

same data from different stations. The result of the data comparison of those stations is a dataset **based on** both station datasets. If we merge data of these two stations, data from each station will be the **child of** the merge, and the merge is the **parent of** those datasets. If we do further analysis in our project and want to draw consumers' attention, we will **link** them together.

How do I find a dataset?

If you know the Id or the name of a dataset, you can find it in the list of all datasets. Otherwise, BEXIS 2 search engine provides results on the metadata. You can look for a dataset by searching for its Meta information, e.g., the owner or keywords' name.

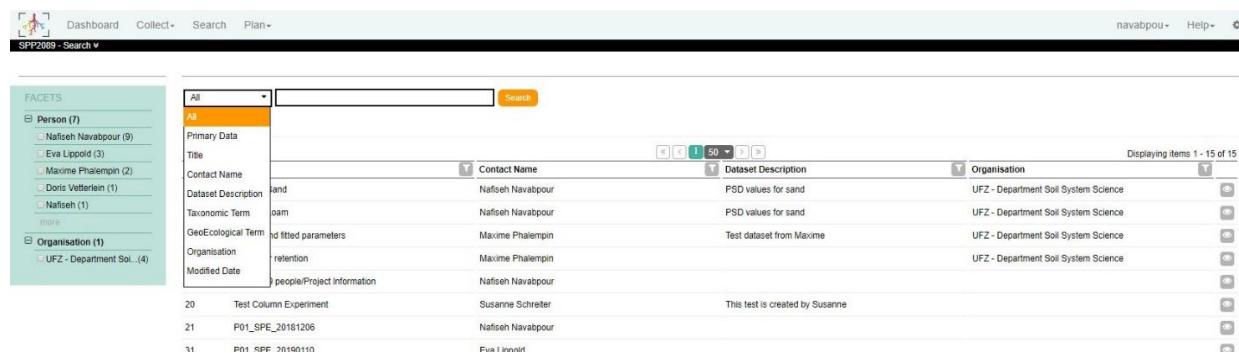
Note: don't forget to uncheck the *public only* option.

Enter at least three characters in the search bar that shows you the search keywords existing in the database. Then click on the **Search** button and see the result in the search result table.



The screenshot shows the BEXIS 2 search interface. The search bar contains 'All' and is empty. The 'public only' checkbox is checked. The search results table is empty, showing 'No records to display.' There are two sections of facets on the left: 'Person (0)' and 'Organisation (0)'. The top navigation bar includes 'Dashboard', 'Collect', 'Search', 'Plan', 'navabpou', 'Help', and a gear icon.

Restrict your search by selecting a category, e.g., title, from the drop-down list in front of the search bar to restrict your search.



The screenshot shows the BEXIS 2 search interface with 'All' selected in the search bar. The results table displays 15 items, with the first few rows shown below:

ID	Title	Contact Name	Dataset Description	Organisation
20	Test Column Experiment	Nafiseh Navabpour	PSD values for sand	UFZ - Department Soil System Science
21	P01_SPE_20181206	Nafiseh Navabpour	PSD values for sand	UFZ - Department Soil System Science
21	P01_SPE_20190110	Nafiseh Navabpour	Test dataset from Maxime	UFZ - Department Soil System Science
			This test is created by Susanne	

The left sidebar shows facets for 'Person (7)' and 'Organisation (1)'. The top navigation bar is identical to the first screenshot.

The search result contains all datasets, including your term in the metadata, e.g., *address*, or the primary data, e.g., *variable names*.

To restrict the result, you have different options:

- Click on the facets on the left pane
- Specify a filter by clicking on the filter icon available in each column
- Change the result order via sorting a column by clicking on a name in the header

To view more details of a dataset, click the **View Details** button available in each row.

BEXIS 2 User Guide for SPP 2089 - Last update: 10/2/2020

SPP2089 - Search 

Dashboard Collect Search Plan 

navabpour 

Facets

- person (7)**
 - Nafiseh Navabpour (9)
 - Eva Lippold (3)
 - Maxime Phalempin (2)
 - Doris Vetterlein (1)
 - Nafiseh (1)
 - more
- organisation (1)**
 - UFZ - Department Soil System Science (4)

public only 

All  

 Displaying items 1 - 15 of 15

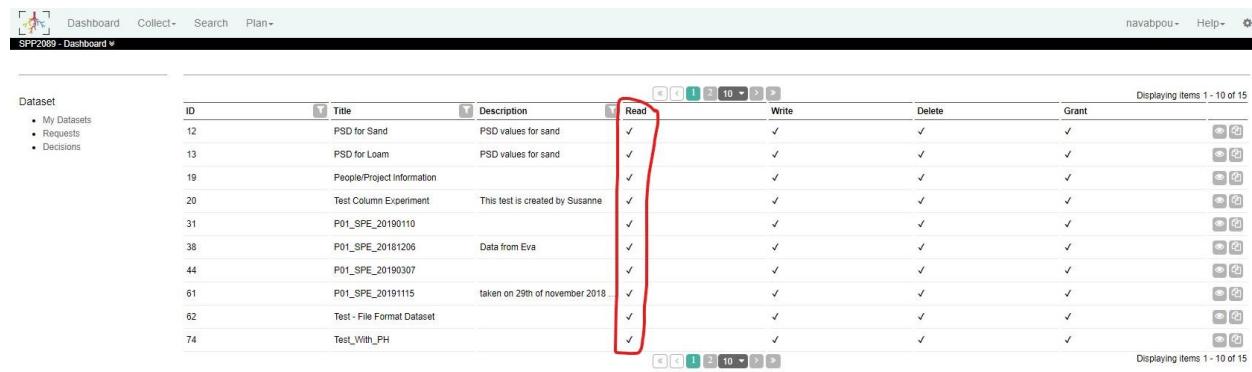
ID	Title	Contact Name	Dataset Description	Organisation
12	PSD for Sand	Nafiseh Navabpour	PSD values for sand	UFZ - Department Soil System Science
13	PSD for Loam	Nafiseh Navabpour	PSD values for sand	UFZ - Department Soil System Science
14	Loam/Sand fitted parameters	Maxime Phalempin	Test dataset from Maxime	UFZ - Department Soil System Science
16	Soil water retention	Maxime Phalempin		UFZ - Department Soil System Science
19	SPP 2089 people/Project Information	Nafiseh Navabpour		
20	Test Column Experiment	Susanne Schreiter	This test is created by Susanne	
21	P01_SPE_20181206	Nafiseh Navabpour		
31	P01_SPE_20190110	Eva Lippold		
37	Master_soil analysis_WP1_2016.02.05_su.xlsx			
38	P01_SPE_20181206	Nafiseh Navabpour		
44	P01_SPE_20190307	Eva Lippold		
52	P01_SPE_20190110_1	Eva Lippold		
61	P01_SPE_20191115	Doris Vetterlein	taken on 29th of november 2018 in Bad Lauchstädt out of t...	
62	Test - File Format Dataset	Nafiseh Navabpour		
66	Dataset/Owner Information	Nafiseh	Information about uploaded datasets	

 Displaying items 1 - 15 of 15



How do I download a dataset?

To **download** a dataset, you need to have the **Read** permission. The read permission you can find in your **dashboard** close the ID and the name of the dataset.

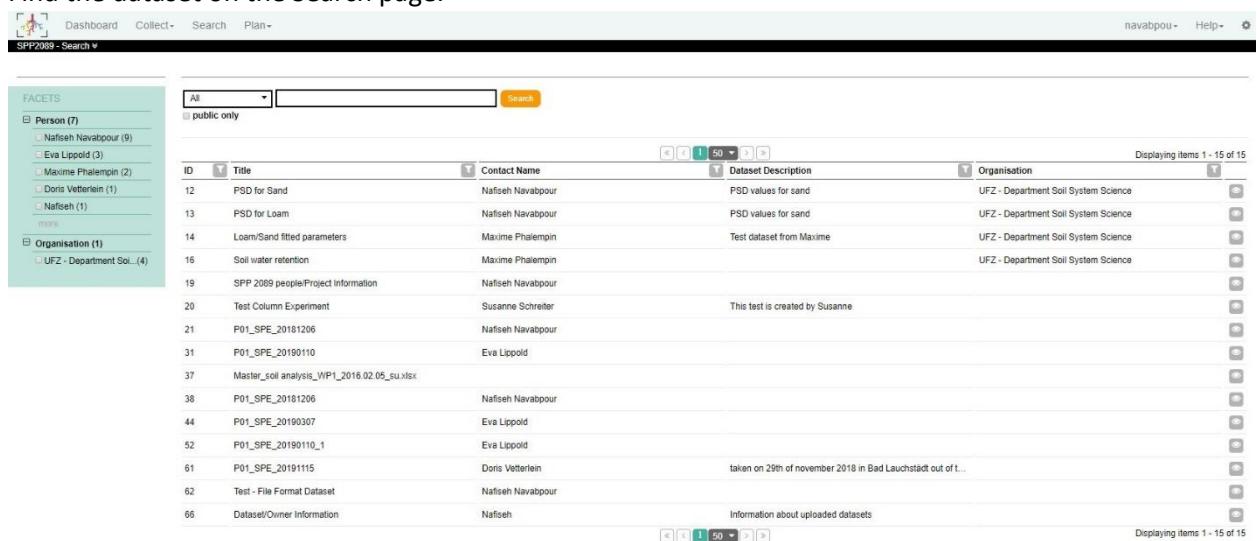


Dataset

ID	Title	Description	Read	Write	Delete	Grant
12	PSD for Sand	PSD values for sand	✓	✓	✓	✓
13	PSD for Loam	PSD values for sand	✓	✓	✓	✓
19	People/Project information		✓	✓	✓	✓
20	Test Column Experiment	This test is created by Susanne	✓	✓	✓	✓
31	P01_SPE_20190110		✓	✓	✓	✓
38	P01_SPE_20181206	Data from Eva	✓	✓	✓	✓
44	P01_SPE_20190307		✓	✓	✓	✓
61	P01_SPE_20191115	taken on 29th of november 2018	✓	✓	✓	✓
62	Test - File Format Dataset		✓	✓	✓	✓
74	Test_With_PH		✓	✓	✓	✓

If you can find a dataset in your dashboard, go to step 5.

1. Find the dataset on the Search page.



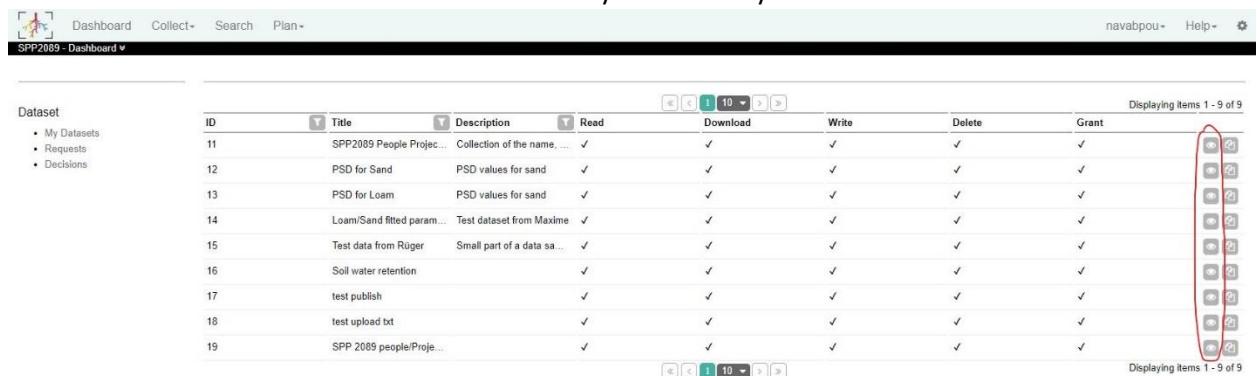
Search

FACETS

- Person (7)
 - Nafiseh Navabpour (9)
 - Eva Lippold (3)
 - Maxime Phaletpin (2)
 - Doris Vetterlein (1)
 - Nafiseh (1)
 - more...
- Organisation (1)
 - UFZ - Department Soil System Science (4)

ID	Title	Contact Name	Dataset Description	Organisation
12	PSD for Sand	Nafiseh Navabpour	PSD values for sand	UFZ - Department Soil System Science
13	PSD for Loam	Nafiseh Navabpour	PSD values for sand	UFZ - Department Soil System Science
14	Loam/Sand fitted parameters	Maxime Phaletpin	Test dataset from Maxime	UFZ - Department Soil System Science
16	Soil water retention	Maxime Phaletpin		UFZ - Department Soil System Science
19	SPP 2089 people/Project information	Nafiseh Navabpour		
20	Test Column Experiment	Susanne Schreiter	This test is created by Susanne	
21	P01_SPE_20181206	Nafiseh Navabpour		
31	P01_SPE_20190110	Eva Lippold		
37	Master_soil analysis_WP1_2016.02.05_su.xlsx			
38	P01_SPE_20181206	Nafiseh Navabpour		
44	P01_SPE_20190307	Eva Lippold		
52	P01_SPE_20191110_1	Eva Lippold		
61	P01_SPE_20191115	Doris Vetterlein	taken on 29th of november 2018 in Bad Lauchstädt out of...	
62	Test - File Format Dataset	Nafiseh Navabpour		
66	Dataset/Owner Information	Nafiseh	Information about uploaded datasets	

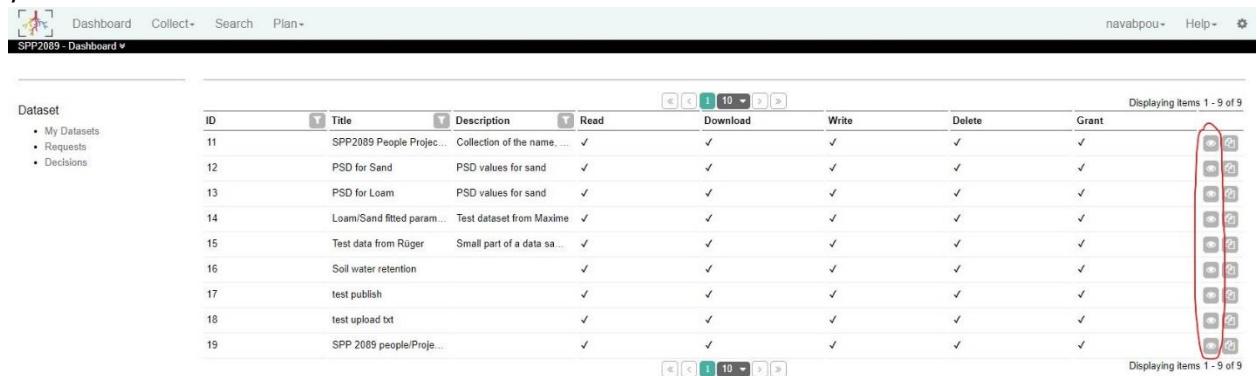
2. Click on the view icon closed to the dataset. The system refers you to the Dataset View.



Dataset

ID	Title	Description	Read	Download	Write	Delete	Grant
11	SPP2089 People Projec...	Collection of the name, ...	✓	✓	✓	✓	✓
12	PSD for Sand	PSD values for sand	✓	✓	✓	✓	✓
13	PSD for Loam	PSD values for sand	✓	✓	✓	✓	✓
14	Loam/Sand fitted param...	Test dataset from Maxime	✓	✓	✓	✓	✓
15	Test data from Rüger	Small part of a data sa...	✓	✓	✓	✓	✓
16	Soil water retention		✓	✓	✓	✓	✓
17	test publish		✓	✓	✓	✓	✓
18	test upload txt		✓	✓	✓	✓	✓
19	SPP 2089 people/Projec...		✓	✓	✓	✓	✓

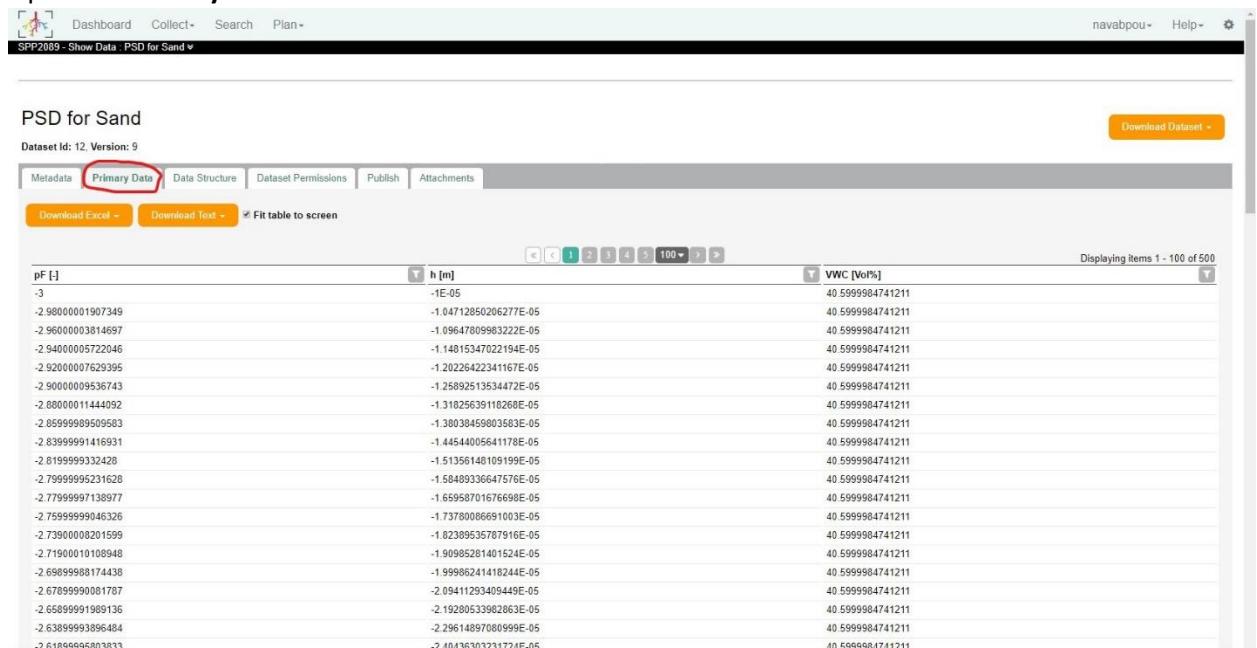
3. From the metadata, find who is responsible for the dataset. If the responsible person is not specified, contact the data manager (Nafiseh.navabpour@ufz.de).
4. After that, the dataset responsible permits you to see the dataset, and you will find it on your dashboard.
5. Find the dataset in your dashboard. Click on the view icon closed to the dataset. The system refers you to the Dataset View.



The screenshot shows a table of datasets with the following columns: ID, Title, Description, Read, Download, Write, Delete, and Grant. The 'Grant' column contains icons for each dataset. The first two icons in this column are circled in red.

Dataset	ID	Title	Description	Read	Download	Write	Delete	Grant
• My Datasets	11	SPP2089 People Projec...	Collection of the name, ...	✓	✓	✓	✓	✓
• Requests	12	PSD for Sand	PSD values for sand	✓	✓	✓	✓	✓
• Decisions	13	PSD for Loam	PSD values for sand	✓	✓	✓	✓	✓
	14	Loam/Sand fitted param...	Test dataset from Maxime	✓	✓	✓	✓	✓
	15	Test data from Ruper	Small part of a data sa...	✓	✓	✓	✓	✓
	16	Soil water retention		✓	✓	✓	✓	✓
	17	test publish		✓	✓	✓	✓	✓
	18	test upload txt		✓	✓	✓	✓	✓
	19	SPP 2089 people/Projec...		✓	✓	✓	✓	✓

6. Open the Primary Data tab.



The screenshot shows the 'Primary Data' tab selected. The table has the following columns: pF, h [m], and VWC [Vol%]. The first two rows of the table are circled in red.

pF [-]	h [m]	VWC [Vol%]
-3	-1E-05	40 599984741211
-2.98000001907349	-1.04712850206277E-05	40 599984741211
-2.96000003814697	-1.09647809983222E-05	40 599984741211
-2.94000005722046	-1.14015347022194E-05	40 599984741211
-2.92000007629395	-1.20226422341167E-05	40 599984741211
-2.90000009536743	-1.25892513534472E-05	40 599984741211
-2.88000011444092	-1.31825639116268E-05	40 599984741211
-2.85999895059583	-1.3803455903563E-05	40 599984741211
-2.8399991416931	-1.44544005641178E-05	40 599984741211
-2.819999932428	-1.51356148109199E-05	40 599984741211
-2.7999995231628	-1.58480336647576E-05	40 599984741211
-2.77999997138977	-1.65958701676698E-05	40 599984741211
-2.75999999046326	-1.73780066691003E-05	40 599984741211
-2.73900008201599	-1.82309535767916E-05	40 599984741211
-2.71900010108948	-1.90985281401524E-05	40 599984741211
-2.6999980174438	-1.9998624148244E-05	40 599984741211
-2.67899990081787	-2.09411293409449E-05	40 599984741211
-2.6589991989136	-2.19280533962863E-05	40 599984741211
-2.6389993896484	-2.29614897080999E-05	40 599984741211
-2.61866664683311	-2.40000000000000E-05	40 599984741211

7. Download options are under the orange buttons.

a. **Download Excel**

Click this button if you want to download an excel format of a dataset with or without header information.

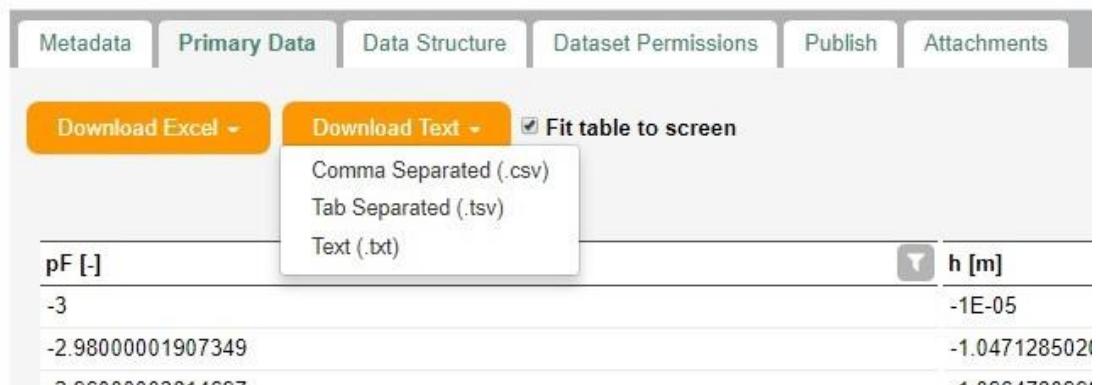


A freeze header in a Template contains much information about variables, including units and data types, while Excel only contains variable names in the title. If you want to add all units of measurements next to variables, tick "Download data with units" Before downloading.

See [How do I work with an Excel Template?](#)

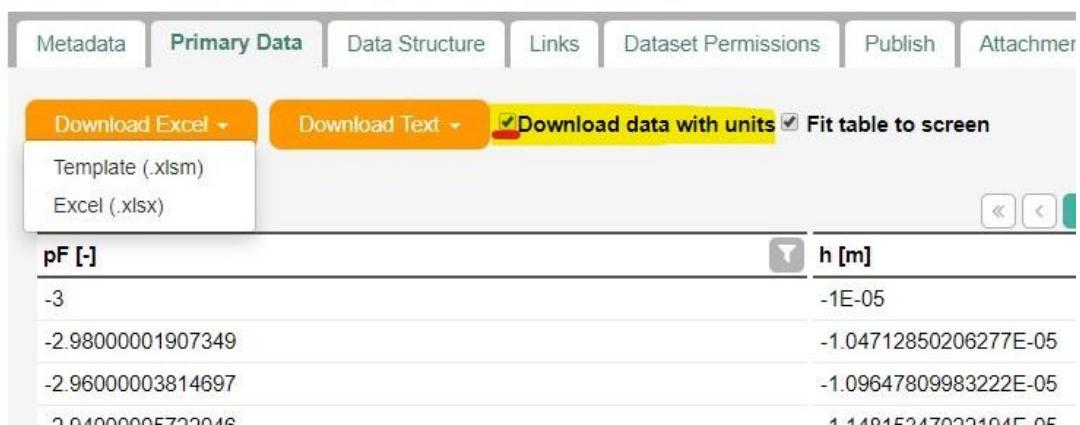
b. Download Text

Click this button if you want to download a text format of a dataset. BEXIS 2 offers CSV, TSV, and TXT formats. The CSV format is comma-separated, but TSV and TXT format is tab-separated.



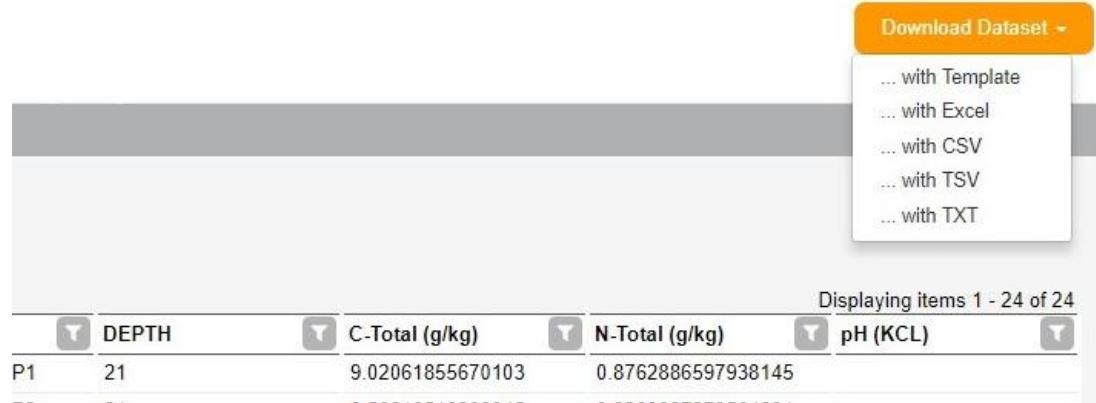
c. Download data with units

If you want to download data that contains additional information about the unit of measurement, you should select the option "Download data with units."



d. Download dataset

Click this button to download data and more information about the dataset in one compressed folder.

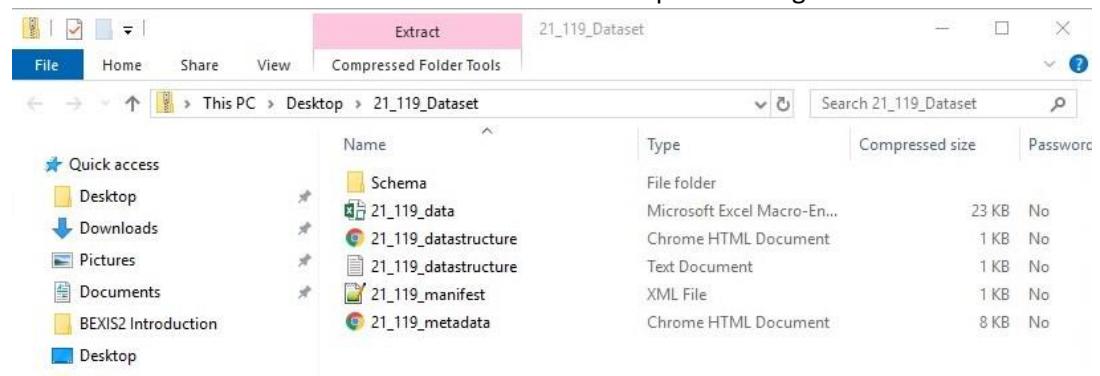


The screenshot shows a software interface with a table of data and a 'Download Dataset' menu. The table has columns: DEPTH, C-Total (g/kg), N-Total (g/kg), and pH (KCL). The data rows are P1 (DEPTH 21, C-Total 9.02061855670103, N-Total 0.8762886597938145) and P2 (DEPTH 21, C-Total 8.66616618768345, N-Total 0.8762886597938145). The 'Download Dataset' menu is open, showing options: ... with Template, ... with Excel, ... with CSV, ... with TSV, and ... with TXT.

	DEPTH	C-Total (g/kg)	N-Total (g/kg)	pH (KCL)
P1	21	9.02061855670103	0.8762886597938145	
P2	21	8.66616618768345	0.8762886597938145	

Displaying items 1 - 24 of 24

You will find your data in your preferred format, two different formats of the metadata structure, two various forms of the data structure, and one or more files contain information about the dataset. You do not need this option for regular use.



The screenshot shows a file explorer window with a 'Compressed Folder Tools' ribbon tab selected. The path is 'This PC > Desktop > 21_119_Dataset'. The contents of the folder are listed in a table:

Name	Type	Compressed size	Password
Schema	File folder		
21_119_data	Microsoft Excel Macro-En...	23 KB	No
21_119_datastructure	Chrome HTML Document	1 KB	No
21_119_datastructure	Text Document	1 KB	No
21_119_manifest	XML File	1 KB	No
21_119_metadata	Chrome HTML Document	8 KB	No

How do I access BEXIS 2 data through R?

BEXIS 2 APIs is a platform that provides fast and reliable data APIs to access data with no need to download a dataset. This possibility allows you to read online data. Reading online data makes you sure that data is fresh, and you have not lost the last updates.

To use BEXIS 2 APIs, you need to find your API key and prepare the R environment.

Get the API key

The API key is a Token that you can find it by choosing the **Token** option under your profile username in the menu.



The token is a long and characterized code that you need when you want to set up options in the R program.



Prepare the R environment

To be able to exchange data between R statistics and SPP 2089 BEXIS 2 platform, installing and loading following packages is required.

```
install.packages ("usethis")
library (usethis)
install.packages ("devtools")
library (devtools)
```

```
install.packages ("httr")
library (httr)
install.packages ("jsonlite")
library (jsonlite)
install.packages ("XML")
library (XML)
```

If you want to reach data uploaded in BEXIS 2 through R, a specific package calls "rBExIS" is needed. Installing this package is possible only if you download the package on your computer. The folder "rBExIS" you will find in the page Data Management in the SPP 2089 intranet. It also exists on GitHub.

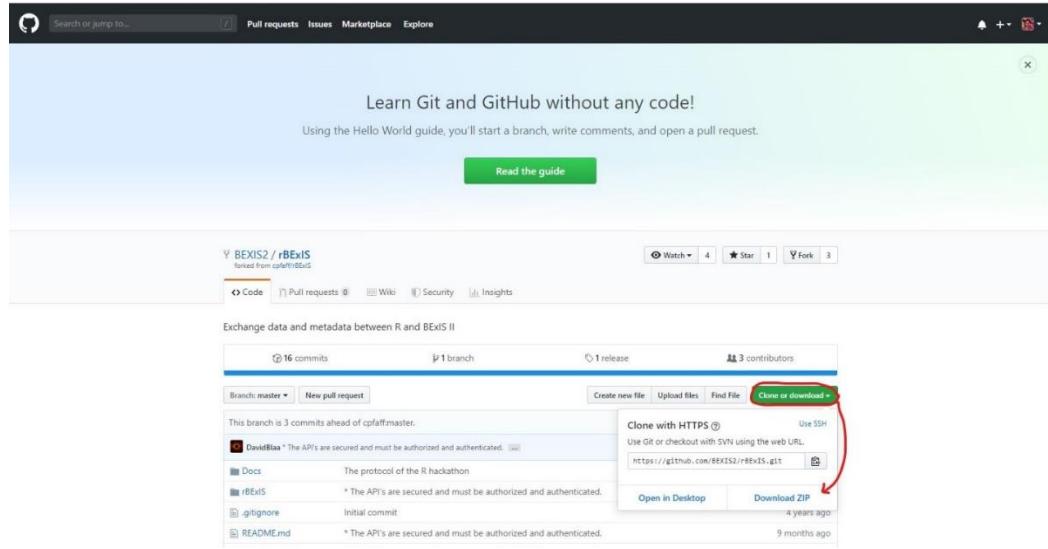
1. Download rBExIS package

- You will find the "rBExIS" package through the SPP 2089 intranet in *Download* and *Data Management* pages. Download and copy it to the R Working Directory.



The screenshot shows the BEXIS2 - Data Management System intranet page. The left sidebar has a navigation menu with 'SPP 2089 Intranet' selected. The main content area displays the BEXIS logo and a brief description of the software. Below the description are download links for the user guide and the R package. The right sidebar contains contact information for Nafiseh Navabpour and a news section.

- Download the "rBExIS" package from *GitHub*



1. Open the link <https://github.com/BEXIS2/rBExIS>
 2. Click on the "Clone or Download" button
 3. Click on the "Download ZIP" option
 4. Save the ZIP file in your computer and then un-ZIP it
 5. Copy the sub-folder "rBExIS" (the folder contains DESCRIPTION) in your R Working Directory.
-
2. Install the „rBExIS“ package
 - a) Install from your computer (Recommended)
`Devtools::install ("PATH_TO_THE _rBExIS")`
 - b) Install directly from the GitHub (The new version of the R Studio does not support this function)
`install_github ("BEXIS2/rBExIS", subdir = "rBExIS")`
 3. Load “rBExIS” package

```
library (rBExIS)  
  
load_all ("rBExIS")  
  
check ("rBExIS")  
  
require (rBExIS)
```
 4. Set options for the rBExIS package
`bexis.options()`
`bexis.options("token" = "YOUR_TOKEN")`
`bexis.options("base_url" = "https://spp2089.ufz.de:4433")`

Data access functions

The "rBExIS" package provides two main features to access data through R without download the dataset.

1. Have a list of all dataset Ids

bexis.get.datasets ()

2. Retrieve data from a dataset specified by the dataset Id

bexis.get.dataset_by (id = XY)

Note: replace XY with the dataset Id.

How do I add files to a File format dataset?

A file format dataset is an unstructured dataset like images or any other files that you want to push into the BEXIS 2 with no care for their content.

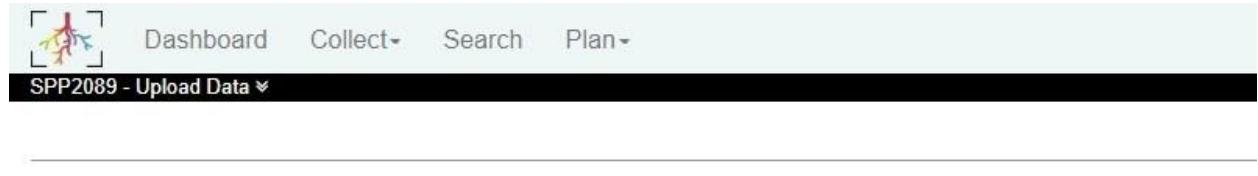
1. Select **Upload Data** under the **Collect** menu item.



The screenshot shows the BEXIS 2 interface with the following details:

- The top navigation bar includes a logo, "Dashboard", "Collect", "Search", and "Plan".
- The "Collect" menu is open, showing "Create Dataset", "Upload Data" (which is highlighted with a red box), "Import Data", and "Push Big File".
- A sidebar on the left is titled "FACETS" and contains "Person (0)" and "Organisation (0)".
- The main content area has a search bar with "public only" checked and a "Search" button.
- Below the search bar, there are columns for "ID", "Title", and "Contact Name".
- A message at the bottom says "No records to display.".

2. Select the **File** option on the following page.



The screenshot shows the "Upload Data" page with the following details:

- The top navigation bar includes a logo, "Dashboard", "Collect", "Search", and "Plan".
- The title bar says "SPP2089 - Upload Data".
- The main content area is titled "Add Data or Update Dataset".
- Below the title, a message says: "In order to add to or update data of an existing dataset in the system, please select whether the dataset is structured or unstructured.".
- Two buttons are shown: "Tabular" (selected) and "File".

3. Click on the **Select** and choose a file from your computer or the drop-down list. Then click on the **Next** and go to the next step.

Please note that you can only select one file to upload to an unstructured dataset each time.

Select File

Specify Dataset

Summary

Select File

Please select a data file to be uploaded to the system.

Note: Large data files may take several minutes or hours to transfer, depending on your network speed. The system is freezed until the file has been transferred completely. Please be patient!

For multiple large files you may use the "Push Big Data to Server" option before entering this Upload Wizard

Supported file formats: (*.avi) (*.bmp) (*.csv) (*.dbf) (*.doc) (*.docx) (*.gif) (*.jpg) (*.jpeg) (*.mp3) (*.mp4) (*.pdf) (*.png) (*.shp) (*.shx) (*.tif) (*.txt) (*.xls) (*.xlsm) (*.xlsx) (*.xsd) (*.zip)

Maximum file size: 1024 MB

Select...

Select a data file from your local computer.

Select, please

Select a data file previously uploaded to the server.

4. Select a dataset from the drop-down list that you want to add the selected file to it. Then click on the **Next** button.

Select File

Get File Information

Specify Dataset

Choose Update Method

Validation

Summary

You have selected Dataset: P01_SPE_20181206_24

Your data is stored and managed as part of a dataset.

A dataset may contain one or more of your data files. But all data files within one dataset must be of the same data structure, i.e. in structured datasets the number of variables and their properties must be identical in each file.

(53) P01_SPE_20181206_24

Select an existing dataset to attach your file with.

Prev

(3 of 6)

Cancel

Next

5. Your update process will complete on the following page. Click on the **Finish** button to go to the dataset view.

For a list of uploaded files, see the **Primary Data** tab.

Raw Data

Dataset Id: 64, Version: 5

Metadata Primary Data Data Structure Dataset Permissions Publish Attachments

Download

Filename	Type	Extention	File size
64_2_maize1.jpg	image/jpeg	.jpg	17.335 kB
64_2_maize2.jpg	image/jpeg	.jpg	117.017 kB
64_2_maize3.jpg	image/jpeg	.jpg	61.881 kB

Note: If you want to delete a file from an unstructured dataset, please contact me at nafiseh.navabpour@ufz.de.

How do I change data uploaded to a tabular format dataset?

Assume that you have uploaded data to an existing dataset, and you want to change data in some cells. It may be the cause of finding errors, and so on.

For example, the table below exists.

ID	First Name	Last Name	Email
1	Eva	Lippold	eva.lippold@ufz.de
2	Maxim	Phalempin	maxime.phalempin@ufz.de
3	Naf	Navabpour	nafiseh.navabpour@ufz.de

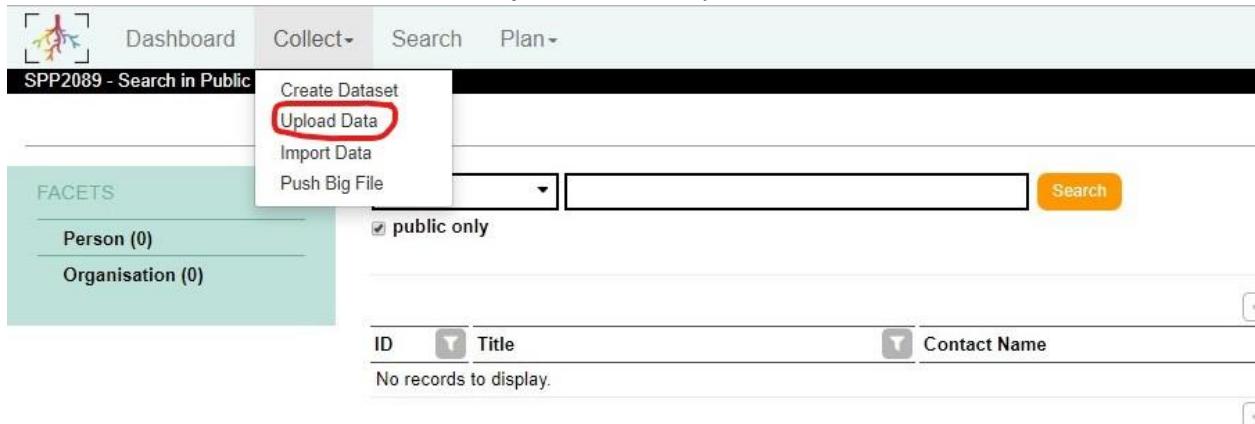
You see that the first name in the third line is incorrect. It should change like this:

ID	First Name	Last Name	Email
1	Eva	Lippold	eva.lippold@ufz.de
2	Maxim	Phalempin	maxime.phalempin@ufz.de
3	Nafiseh	Navabpour	nafiseh.navabpour@ufz.de

Go through the following steps to edit a dataset.

1. Open the data table from your computer.
You can still work with a data table in your computer or have recently downloaded a dataset from the BEXIS 2. No matter what format has your file.
2. Make changes to the data table and save it.
It is essential to keep a data tuple (one or a combination of some variables) as an identifier. The identifier should be unique throughout the dataset. The identifier in our example could be ID, Email, or the tuple of (ID, Email).
3. Now you need to perform the normal upload process in BEXIS 2, except that you must select an update method and specify the identifier.

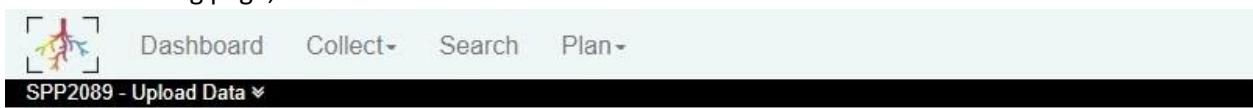
Under the menu item **Collect**, select the **Upload Data** entry.



The screenshot shows the BEXIS 2 interface with the following details:

- Header:** Dashboard, Collect, Search, Plan.
- Left Sidebar:** SPP2089 - Search in Public, FACETS (Person (0), Organisation (0)).
- Top Bar:** Create Dataset, Upload Data (highlighted with a red box), Import Data, Push Big File.
- Search Bar:** public only, Search button.
- Table:** ID, Title, Contact Name. Below the table, it says "No records to display."

4. On the following page, select **Tabular** as the dataset format.



The screenshot shows the BEXIS 2 interface with a top navigation bar featuring 'Dashboard', 'Collect', 'Search', and 'Plan'. Below the navigation is a black header bar with the text 'SPP2089 - Upload Data'. The main content area is titled 'Add Data or Update Dataset'. At the top of this section are two buttons: 'Tabular' (highlighted in green) and 'File'. The 'Tabular' button is currently selected.

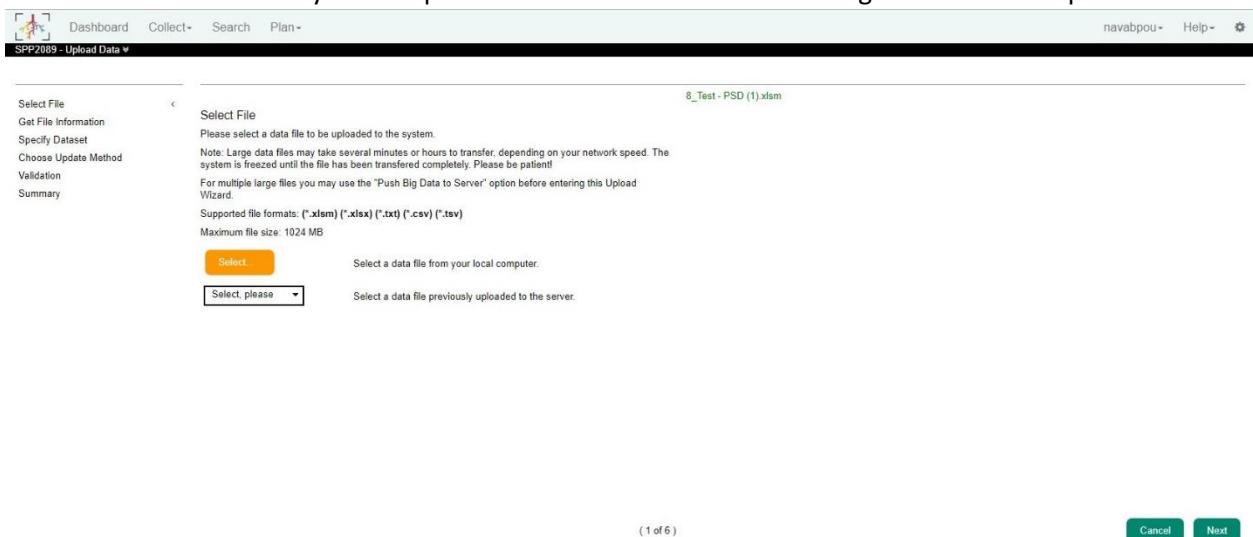
Add Data or Update Dataset

In order to add to or update data of an existing dataset in the system, please select whether the dataset is structured or unstructured.

Tabular

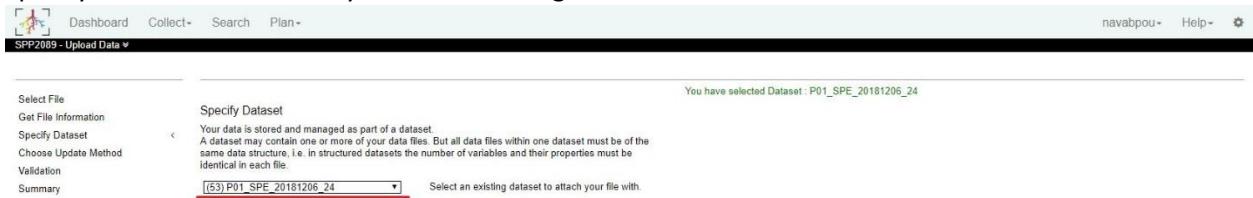
File

5. Select an edited file from your computer. Then click the **Next** button to go to the next step.



The screenshot shows the 'Select File' step of the 'Upload Data' wizard. On the left, a sidebar lists 'Select File', 'Get File Information', 'Specify Dataset', 'Choose Update Method', 'Validation', and 'Summary'. The main area is titled 'Select File' with the sub-instruction 'Please select a data file to be uploaded to the system'. It includes a note about large files and a note about using the 'Push Big Data to Server' option. Below this are file format options ('*.xslm', '*.xlsx', '*.txt', '*.csv', '*.tsv') and a maximum file size limit of 1024 MB. There are two buttons: 'Select' (highlighted in orange) and 'Select, please'. At the bottom right are 'Cancel' and 'Next' buttons. The status bar at the bottom indicates '(1 of 6)'.

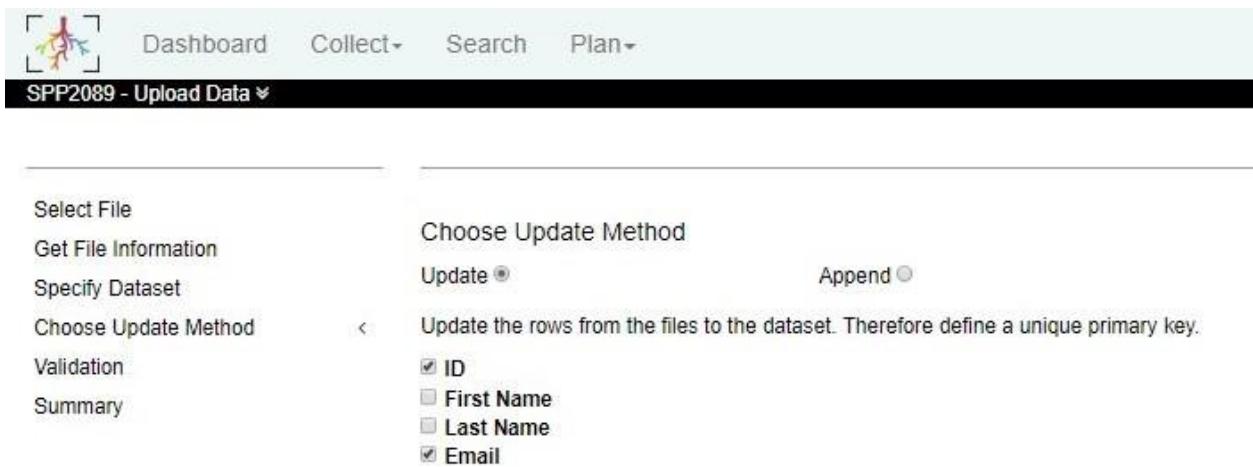
6. Specify the dataset in which you want to change data. Then click on the **Next** button.



The screenshot shows the 'Specify Dataset' step of the 'Upload Data' wizard. On the left, a sidebar lists 'Select File', 'Get File Information', 'Specify Dataset', 'Choose Update Method', 'Validation', and 'Summary'. The main area is titled 'Specify Dataset' with a note about datasets being stored and managed as parts of datasets. It includes a note about dataset structure and a note about identifiers. A dropdown menu shows the selected dataset: '(53) P01_SPE_20181206_24'. Below the dropdown is the instruction 'Select an existing dataset to attach your file with'. At the bottom right are 'Cancel' and 'Next' buttons. The status bar at the bottom indicates 'You have selected Dataset: P01_SPE_20181206_24'.

7. In the following page, select **Update** as the update method.

8. Mark variables that you want to specify as identifiers.



Select File

Get File Information

Specify Dataset

Choose Update Method

Validation

Summary

Choose Update Method

Update

Append

Update the rows from the files to the dataset. Therefore define a unique primary key.

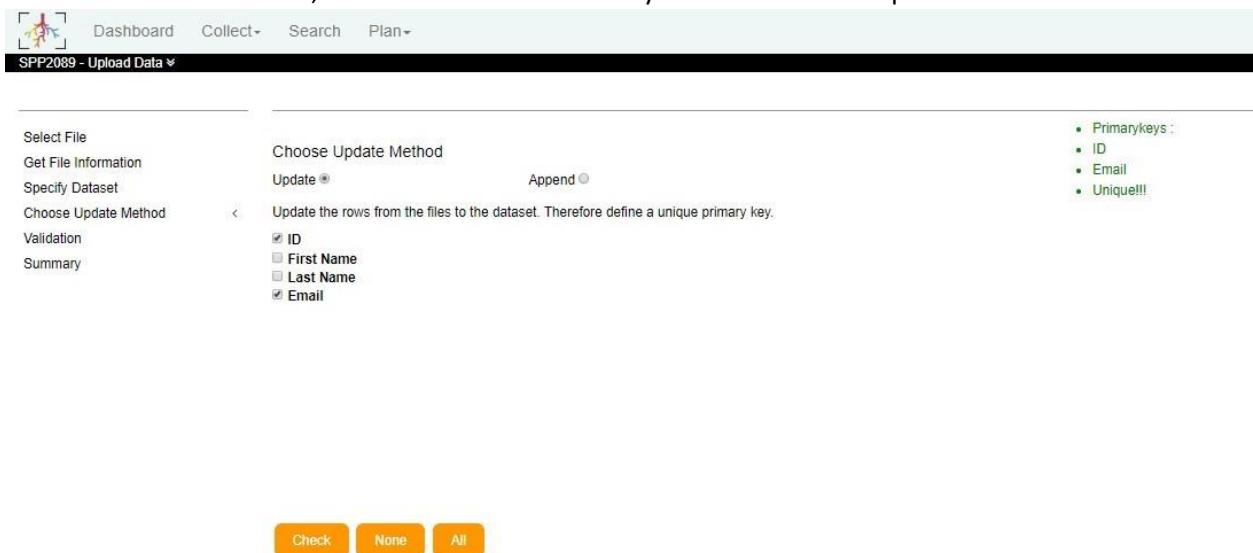
ID

First Name

Last Name

Email

9. Click on the **Check** button, and BEXIS 2 will indicate if your identifier is unique.



Select File

Get File Information

Specify Dataset

Choose Update Method

Validation

Summary

Choose Update Method

Update

Append

Update the rows from the files to the dataset. Therefore define a unique primary key.

ID

First Name

Last Name

Email

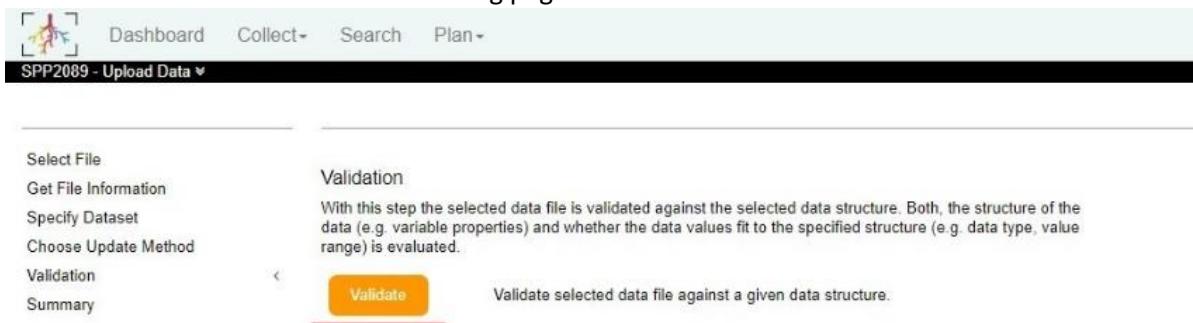
Primarykeys:

- ID
- Email
- Unique!!!

10. Click on the **Next** button.

Please note that the system blocks your progress in this step if your identifier is not unique.

11. Click the **Validate** button on the following page.



Select File

Get File Information

Specify Dataset

Choose Update Method

Validation

Summary

Validation

With this step the selected data file is validated against the selected data structure. Both, the structure of the data (e.g. variable properties) and whether the data values fit to the specified structure (e.g. data type, value range) is evaluated.

Validate

Validate selected data file against a given data structure.

12. Click on the **Next** button if your upload is validated.
13. The following page is the last page of the update procedure contains dataset information.
Click on the **Finish** button to go to the dataset view.

Note: If your dataset does not contain a unique primary key in any row, BEXIS 2 adds the row to the dataset.

How do I add rows to a tabular dataset?

Assume that you have uploaded data to an existing dataset, and you want to add more rows to it.

For example, the table below exists.

ID	First Name	Last Name	Email
1	Eva	Lippold	eva.lippold@student.uni-halle.de
2	Maxim	Phalempin	maximephalempin@gmail.com
3	Nafiseh	Navabpour	nafiseh.navabpour@ufz.de

You want to add a new person to the list as follows:

ID	First Name	Last Name	Email
1	Eva	Lippold	eva.lippold@ufz.de
2	Maxim	Phalempin	maxime.phalempin@ufz.de
3	Nafiseh	Navabpour	nafiseh.navabpour@ufz.de
4	Doris	Vetterlein	doris.vetterlein@ufz.de

Complete the following steps to add rows to a dataset.

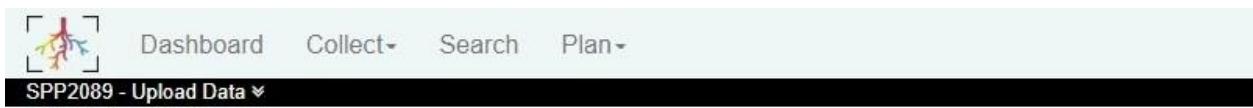
1. Open the data table from your computer.
You can still work with a data table in your computer or have recently downloaded a dataset from the BEXIS 2. No matter what format has your file.
2. Add new rows to the data table and save it.
3. Now you need to perform the normal upload process in BEXIS 2, except that you must choose an update method.

Under the menu item **Collect**, select the **Upload Data** entry.



The screenshot shows the BEXIS 2 interface. At the top, there is a navigation bar with 'Dashboard', 'Collect', 'Search', and 'Plan'. Below this, a sub-menu for 'Collect' is open, showing 'Create Dataset', 'Upload Data' (which is highlighted with a red box), 'Import Data', and 'Push Big File'. To the right of the sub-menu, there is a search bar with the placeholder 'public only' and a 'Search' button. On the left, there is a sidebar titled 'FACETS' with sections for 'Person (0)' and 'Organisation (0)'. At the bottom, there is a table with columns for 'ID', 'Title', and 'Contact Name', and a message 'No records to display.'

4. On the following page, select **Tabular**.



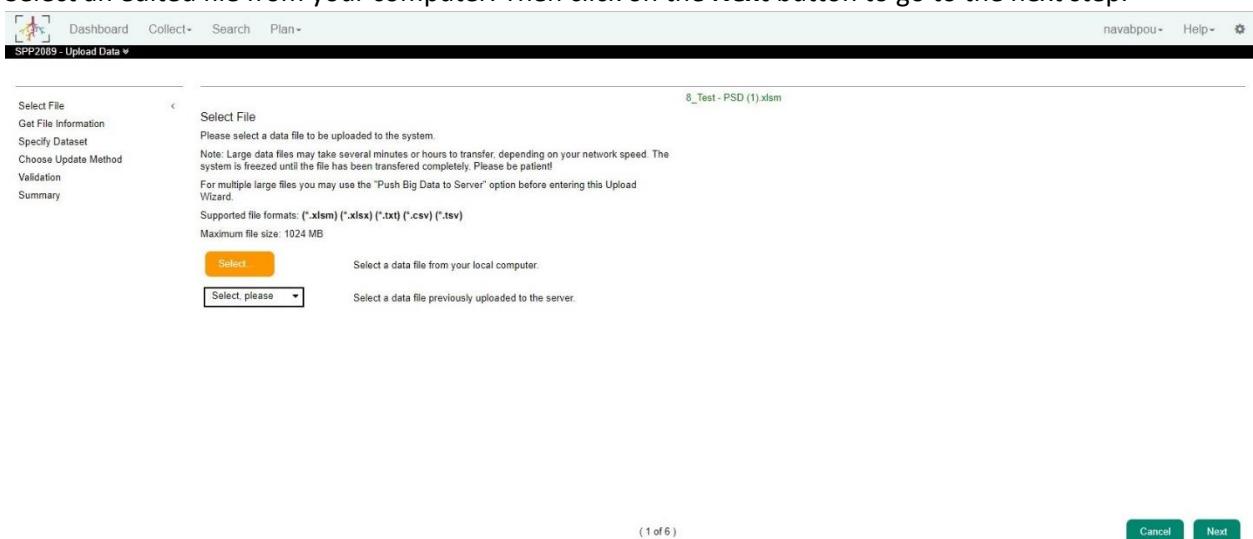
Add Data or Update Dataset

In order to add to or update data of an existing dataset in the system, please select whether the dataset is structured or unstructured.

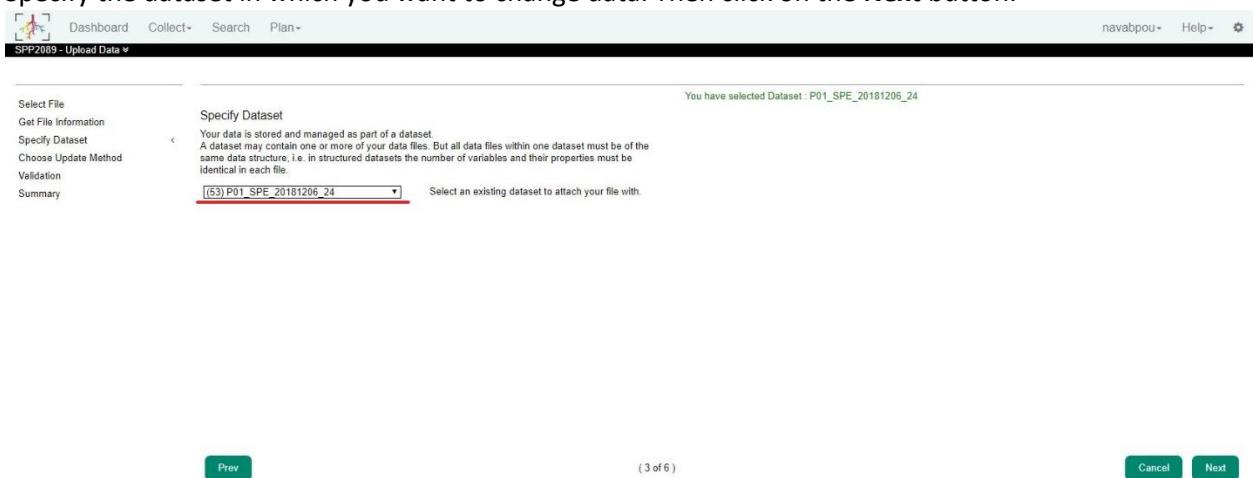
Tabular

File

5. Select an edited file from your computer. Then click on the **Next** button to go to the next step.



6. Specify the dataset in which you want to change data. Then click on the **Next** button.



7. Select **Append** as the update method and Click on the **Next**.

Select File

Get File Information

Specify Dataset

Choose Update Method

Validation

Summary

Choose Update Method

Update

Append

Add the rows from the files to the dataset only.

8. Click the **Validate** button on the following page.

Select File

Get File Information

Specify Dataset

Choose Update Method

Validation

Summary

Validation

With this step the selected data file is validated against the selected data structure. Both, the structure of the data (e.g. variable properties) and whether the data values fit to the specified structure (e.g. data type, value range) is evaluated.

Validate

Validate selected data file against a given data structure.

Prev

(5 of 6)

Next

Cancel

Finish

9. Click on the **Next** button if your upload is validated.
10. The following page is the last page of the update procedure contains dataset information.
11. Click on the **Finish** button to go to the dataset view.

How do I add columns to a tabular dataset?

Assume that you have uploaded data to an existing dataset, and you want to add columns to it.

For example, the table below exists.

Table 1

ID	First Name	Last Name	Email
1	Eva	Lippold	eva.lippold@ufz.de
2	Maxim	Phalempin	maxime.phalempin@ufz.de
3	Nafiseh	Navabpour	nafiseh.navabpour@ufz.de
4	Doris	Vetterlein	doris.vetterlein@ufz.de

You want to add more information to each person, e.g., *Gender*.

Table 2

ID	First Name	Last Name	Email	Gender
1	Eva	Lippold	eva.lippold@ufz.de	F
2	Maxim	Phalempin	maxime.phalempin@ufz.de	M
3	Nafiseh	Navabpour	nafiseh.navabpour@ufz.de	F
4	Doris	Vetterlein	doris.vetterlein@ufz.de	F

In BEXIS 2, a table is stored and managed as part of a tabular dataset based on its data structure. So two tables above do not have the same data structure (*Table 1* has four, and *Table 2* has five variables). Then you must upload the second table as a new dataset with a new data structure.

BEXIS 2 provides two operational features:

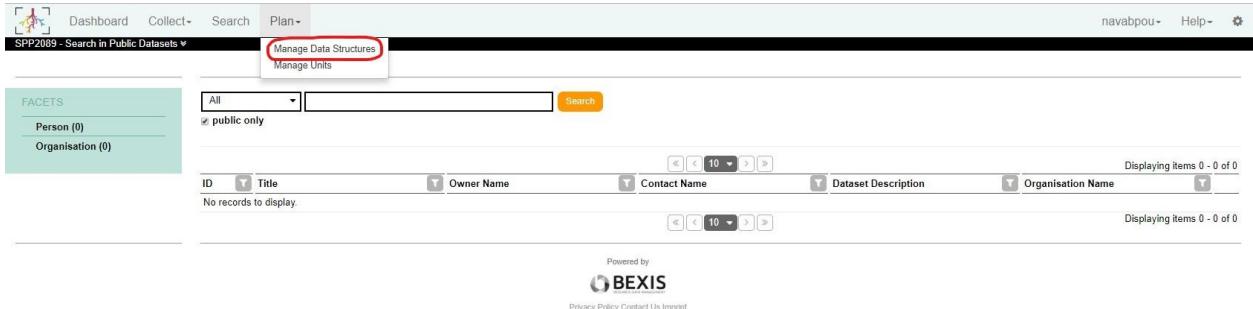
- **Copy Data Structure** creates a new data structure with the same variables.
- **Copy Dataset** creates a new dataset with the same metadata.

These two functions reduce some required actions. You must only complete the following steps.

- I. Make a copy of the old data structure
- II. Add new variables (in our case, Gender)
- III. Create a copy of the old dataset
 - a. Link the new data structure to the new dataset
 - b. Enter a new name for the new dataset
- IV. Upload data

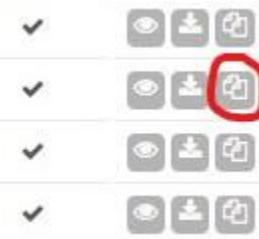
How do I copy a Data Structure?

1. Choose a data structure in the **Manage Data Structures** under the menu item **Plan**.



The screenshot shows the BEXIS 2 interface. At the top, there is a navigation bar with 'Dashboard', 'Collect', 'Search', 'Plan', and other options. The 'Plan' item is highlighted. Below the navigation is a sub-menu for 'SPP2089 - Search in Public Datasets' with 'Manage Data Structures' and 'Manage Units' options. A red circle highlights 'Manage Data Structures'. The main content area is titled 'Manage Data Structures' and shows facets for 'Person (0)' and 'Organisation (0)'. There is a search bar with 'All' selected and a 'Search' button. Below the search bar are filter options for 'public only'. The main table area is empty, showing 'No records to display'. At the bottom, there are pagination controls and links for 'Powered by BEXIS', 'Privacy Policy', 'Contact Us', and 'Imprint'.

2. Click the **Copy** button next to the data structure.



3. Change the name of the new data structure to a non-existent name and save it.

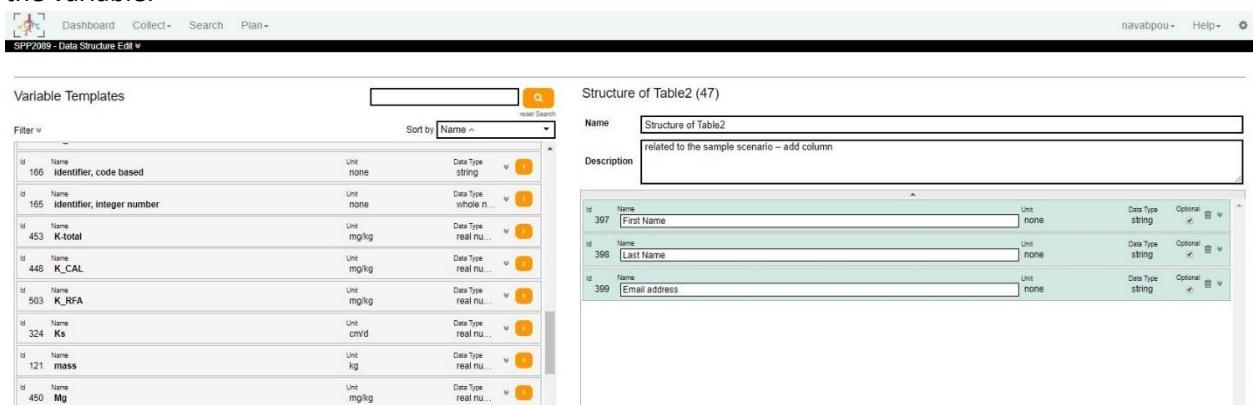
How do I edit an existing Data Structure?

You can edit a data structure before you link it to a dataset.

1. Open the **Data Structure Edit** by clicking the **Edit** button.



2. Add variables that you want to add to the data structure by clicking the orange right arrow next to the variable.

A screenshot of the 'Data Structure Edit' screen. On the left, there is a 'Variable Templates' list with several items. On the right, there is a 'Structure of Table2 (47)' table with three rows. The 'Edit' button for the table is highlighted with a red box.

3. Change the name of the variable in your favorite word and save your changes by clicking **Save**.

How do I create a copy of a dataset?

1. Open the procedure **Create dataset** under the menu item **Collect**.



navabpou Help

Dashboard Collect Search Plan

SPP2089 - Search in Public

Create Dataset

Upload Data

Import Data

Push Big File

public only

Facets

Person (0)

Organisation (0)

Displaying items 0 - 0 of 0

ID Title Owner Name Contact Name Dataset Description Organisation Name

No records to display.

Displaying items 0 - 0 of 0

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BEXIS

2. Select the **dataset** from which you want to make a copy.

Select the dataset from which you want to make a copy.

Dashboard Collect Search Plan [navabpou](#) Help [Settings](#)

SPP2089 - Create Dataset [▼](#)

Please provide the following information.

Dataset	Select	<input style="background-color: #f0a000; color: white; border: 1px solid #f0a000; padding: 2px 10px; border-radius: 5px; font-weight: bold; font-size: 10px; margin-right: 10px;" type="button" value="New Dataset"/>	<input style="background-color: #f0a000; color: white; border: 1px solid #f0a000; padding: 2px 10px; border-radius: 5px; font-weight: bold; font-size: 10px; margin-right: 10px;" type="button" value="New Dataset"/>	<input style="background-color: #f0a000; color: white; border: 1px solid #f0a000; padding: 2px 10px; border-radius: 5px; font-weight: bold; font-size: 10px; margin-right: 10px;" type="button" value="field experiment-test-naf"/>	<input style="background-color: #f0a000; color: white; border: 1px solid #f0a000; padding: 2px 10px; border-radius: 5px; font-weight: bold; font-size: 10px; margin-right: 10px;" type="button" value="field experiment-test-naf-2"/>	<input style="background-color: #f0a000; color: white; border: 1px solid #f0a000; padding: 2px 10px; border-radius: 5px; font-weight: bold; font-size: 10px; margin-right: 10px;" type="button" value="field experiment-test-naf-2"/>	<input style="background-color: #f0a000; color: white; border: 1px solid #f0a000; padding: 2px 10px; border-radius: 5px; font-weight: bold; font-size: 10px; margin-right: 10px;" type="button" value="Loam/Sand fitted parameters"/>	<input style="background-color: #f0a000; color: white; border: 1px solid #f0a000; padding: 2px 10px; border-radius: 5px; font-weight: bold; font-size: 10px; margin-right: 10px;" type="button" value="P01_SPE_20181206"/>
Data Structure *	Select	<input style="background-color: #f0a000; color: white; border: 1px solid #f0a000; padding: 2px 10px; border-radius: 5px; font-weight: bold; font-size: 10px; margin-right: 10px;" type="button" value="New Dataset"/>	<input style="background-color: #f0a000; color: white; border: 1px solid #f0a000; padding: 2px 10px; border-radius: 5px; font-weight: bold; font-size: 10px; margin-right: 10px;" type="button" value="field experiment-test-naf"/>	<input style="background-color: #f0a000; color: white; border: 1px solid #f0a000; padding: 2px 10px; border-radius: 5px; font-weight: bold; font-size: 10px; margin-right: 10px;" type="button" value="field experiment-test-naf-2"/>	<input style="background-color: #f0a000; color: white; border: 1px solid #f0a000; padding: 2px 10px; border-radius: 5px; font-weight: bold; font-size: 10px; margin-right: 10px;" type="button" value="field experiment-test-naf-2"/>	<input style="background-color: #f0a000; color: white; border: 1px solid #f0a000; padding: 2px 10px; border-radius: 5px; font-weight: bold; font-size: 10px; margin-right: 10px;" type="button" value="Loam/Sand fitted parameters"/>	<input style="background-color: #f0a000; color: white; border: 1px solid #f0a000; padding: 2px 10px; border-radius: 5px; font-weight: bold; font-size: 10px; margin-right: 10px;" type="button" value="P01_SPE_20181206"/>	
Metadata Structure *	Select	<input style="background-color: #f0a000; color: white; border: 1px solid #f0a000; padding: 2px 10px; border-radius: 5px; font-weight: bold; font-size: 10px; margin-right: 10px;" type="button" value="New Dataset"/>	<input style="background-color: #f0a000; color: white; border: 1px solid #f0a000; padding: 2px 10px; border-radius: 5px; font-weight: bold; font-size: 10px; margin-right: 10px;" type="button" value="field experiment-test-naf"/>	<input style="background-color: #f0a000; color: white; border: 1px solid #f0a000; padding: 2px 10px; border-radius: 5px; font-weight: bold; font-size: 10px; margin-right: 10px;" type="button" value="field experiment-test-naf-2"/>	<input style="background-color: #f0a000; color: white; border: 1px solid #f0a000; padding: 2px 10px; border-radius: 5px; font-weight: bold; font-size: 10px; margin-right: 10px;" type="button" value="field experiment-test-naf-2"/>	<input style="background-color: #f0a000; color: white; border: 1px solid #f0a000; padding: 2px 10px; border-radius: 5px; font-weight: bold; font-size: 10px; margin-right: 10px;" type="button" value="Loam/Sand fitted parameters"/>	<input style="background-color: #f0a000; color: white; border: 1px solid #f0a000; padding: 2px 10px; border-radius: 5px; font-weight: bold; font-size: 10px; margin-right: 10px;" type="button" value="P01_SPE_20181206"/>	

[Next](#)

- ### 3. Link the dataset to a favorite Data Structure.

SPP2089 - Create Dataset *

Please provide the following information.

Dataset	<input type="button" value="Selected"/> <input type="button" value="New Dataset"/>
Data Structure *	<input type="button" value="Selected"/> <input type="button" value="Select"/>
Metadata Structure *	<input type="button" value="Selected"/> <input type="button" value="Select"/> Column Experiment Field Experiment none people/project information Test - PSD

[Next](#)

4. Change the title of the dataset to be unique.

▼ Description *	<input type="text"/>	
▼ Representation (1) *	<input type="text"/>	
<input type="text"/> * Title		

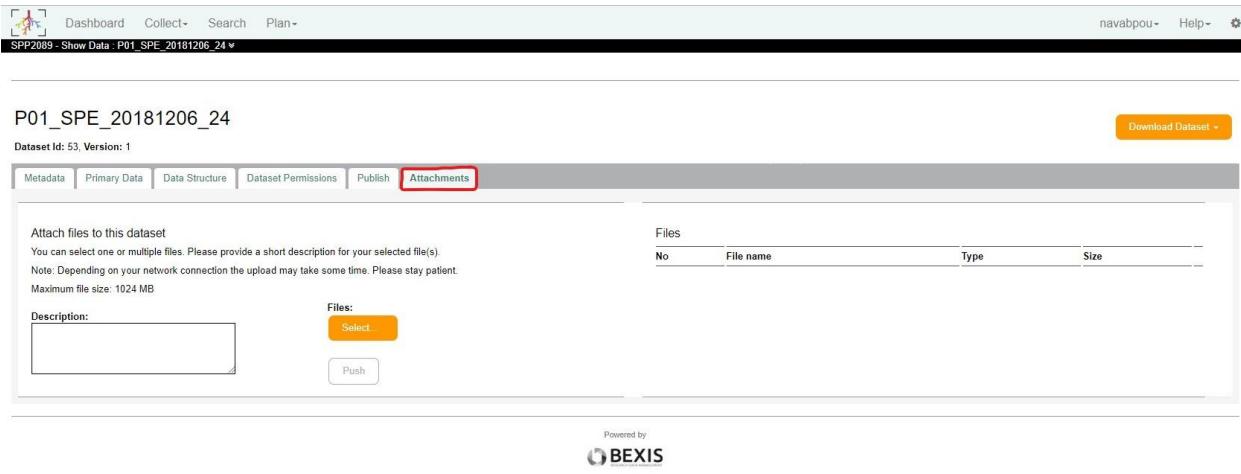
5. Click the **Save** button.

Note: If you want to delete the old dataset, please send me the ID and the dataset name (nafiseh.navabpour@ufz.de).

How do I add/remove attachments?

If you need to attach files to your dataset, go through the following steps. A file could be additional images, word, pdf or text files, etc.

1. Select the **Attachment** tab on the dataset view.



P01_SPE_20181206_24

Dataset Id: 53, Version: 1

Attachments

Attach files to this dataset

You can select one or multiple files. Please provide a short description for your selected file(s).
Note: Depending on your network connection the upload may take some time. Please stay patient.
Maximum file size: 1024 MB

Description:

Files:

Select...

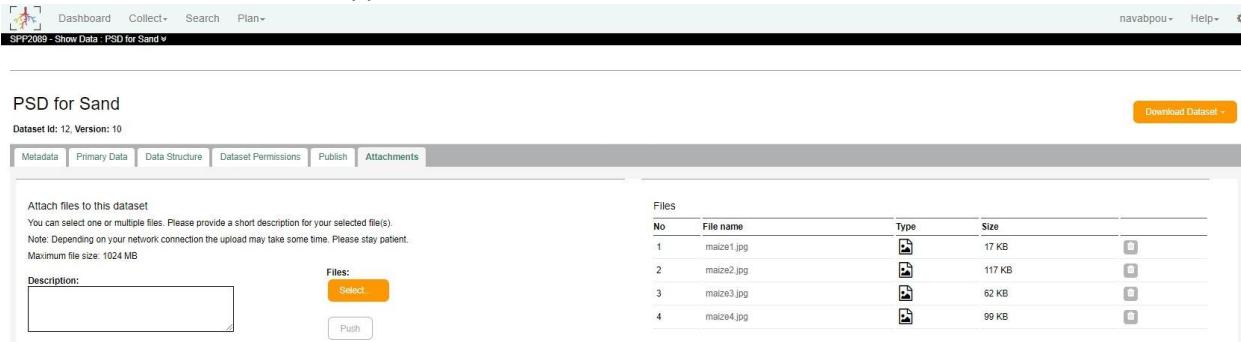
Push

No	File name	Type	Size
1	maize1.jpg		17 KB
2	maize2.jpg		117 KB
3	maize3.jpg		62 KB
4	maize4.jpg		99 KB

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2. Click on the **Select** and choose one or multiple files from your computer. Each file should be smaller than 1GB.
3. Click the **Push**, and files will appear in a list.



PSD for Sand

Dataset Id: 12, Version: 10

Attachments

Attach files to this dataset

You can select one or multiple files. Please provide a short description for your selected file(s).
Note: Depending on your network connection the upload may take some time. Please stay patient.
Maximum file size: 1024 MB

Description:

Files:

Select...

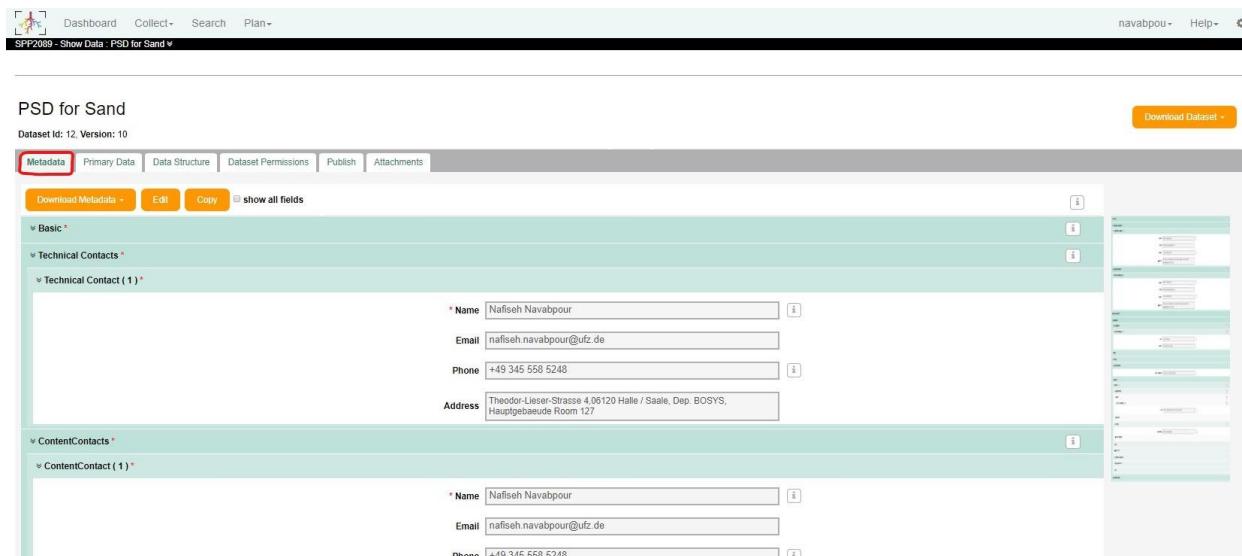
Push

No	File name	Type	Size
1	maize1.jpg		17 KB
2	maize2.jpg		117 KB
3	maize3.jpg		62 KB
4	maize4.jpg		99 KB

To **delete** a file, use the trash icon next to the file.

How do I edit the metadata?

The metadata provides information about your dataset. The metadata formula will open as default when you open a dataset view.



The screenshot shows the BEXIS 2 dataset metadata editor for a dataset named 'PSD for Sand'. The dataset ID is 12, and the version is 10. The 'Metadata' tab is selected, showing the following fields:

- Basic:**
 - Name: Nafiseh Navabpour
 - Email: nafiseh.navabpour@ufz.de
 - Phone: +49 345 558 5248
 - Address: Theodor-Lieser-Strasse 4, 06120 Halle / Saale, Dep. BOSYS, Hauptgebäude Room 127
- Technical Contacts:**
 - Technical Contact (1):
 - Name: Nafiseh Navabpour
 - Email: nafiseh.navabpour@ufz.de
 - Phone: +49 345 558 5248
- Content Contacts:**
 - ContentContact (1):
 - Name: Nafiseh Navabpour
 - Email: nafiseh.navabpour@ufz.de
 - Phone: +49 345 558 5248

Buttons at the top of the editor include 'Download Metadata', 'Edit' (highlighted in orange), 'Copy', and 'show all fields'. A sidebar on the right shows a tree view of the dataset structure.

Click on the **Edit** button to be able to edit the metadata.

Don't forget to **save** your changes.