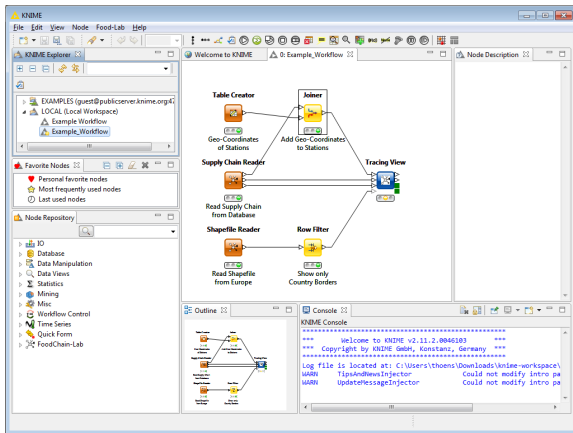


Geo-Clustering in FoodChain-Lab

- Perform a clustering base the following workflow:
[https://github.com/SiLeBAT/
BfR0penLabResources/raw/master/GitHubPages/
workflows/Example_Workflow.zip](https://github.com/SiLeBAT/BfR0penLabResources/raw/master/GitHubPages/workflows/Example_Workflow.zip)
- Cluster all French stations by using the **GIS Cluster** node.
- Use a **Max Neighborhood Distance** of 100km.
- That means two stations are put into the same cluster if their distance is less than 100km.

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- Import the Example Workflow from https://github.com/SiLeBAT/BfROpenLabResources/raw/master/GitHubPages/workflows/Example_Workflow.zip.

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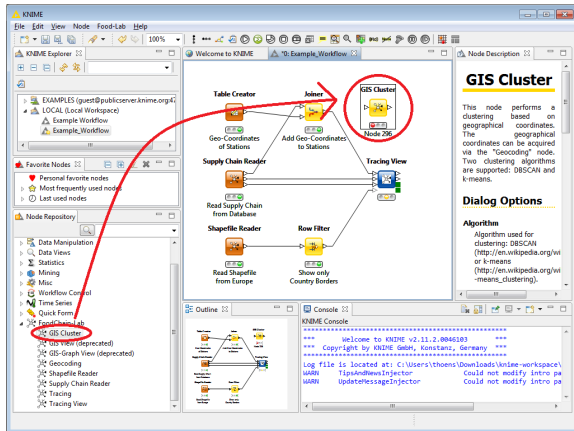
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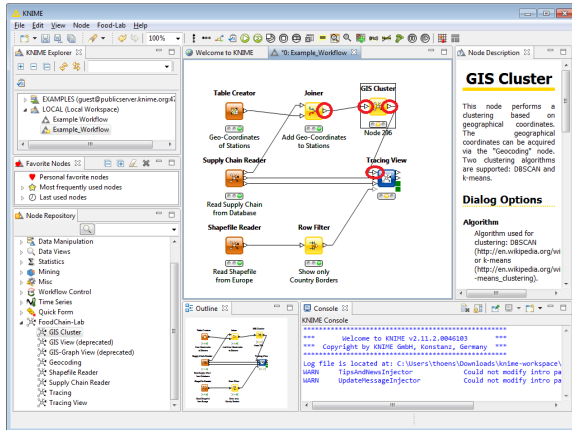
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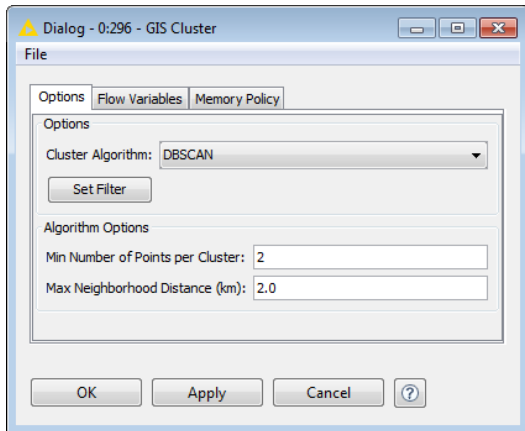
- Drag the **GIS Cluster** node from **FoodChain-Lab** in the **Node Repository** to the **Workflow Editor**.

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- Connect the output of **Joiner** to the input of **GIS Cluster**.
- Connect the output of **GIS Cluster** to the first input of **Tracing View**.
- Double click on the **GIS Cluster** node to open its dialog.



- In this dialog you can set up an algorithm for geographical clustering based latitude and longitude.
- Click on **Set Filter** to define which stations should be clustered.

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Highlight Condition

Type: Logical Condition

Property	Operation	Value
ID	==	

Add Remove

Add

OK Cancel

- You should see this dialog now.

Highlight Condition

Type: Logical Condition

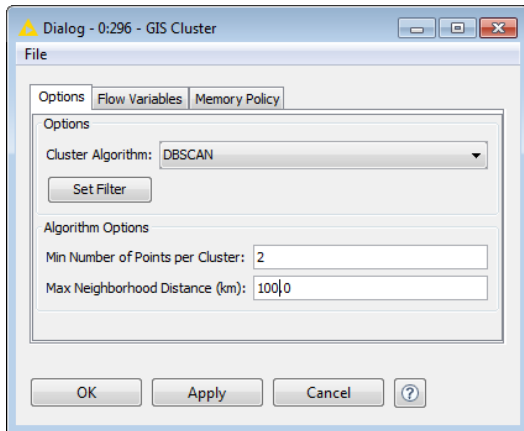
Property	Operation	Value
Country	=	FR

Add Remove

Add

OK Cancel

- For our clustering we only want to use the French stations, since most primary producers in this data set are French.
- Select "Country" as **Property** and "FR" as **Value** and press **OK**.



- Set the **Max Neighborhood Distance** to 100km. That means two stations with distance of less than 100km are put into the same area.
- Press **OK**.

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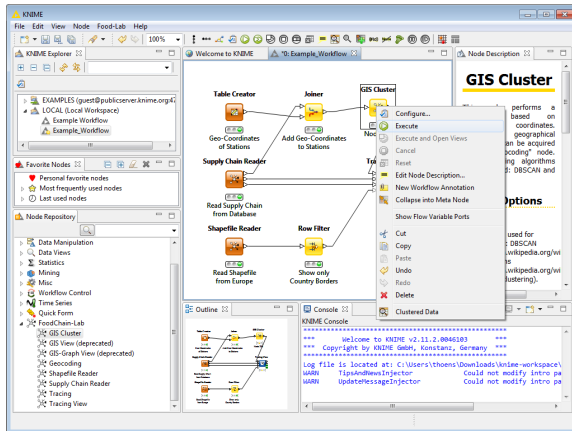
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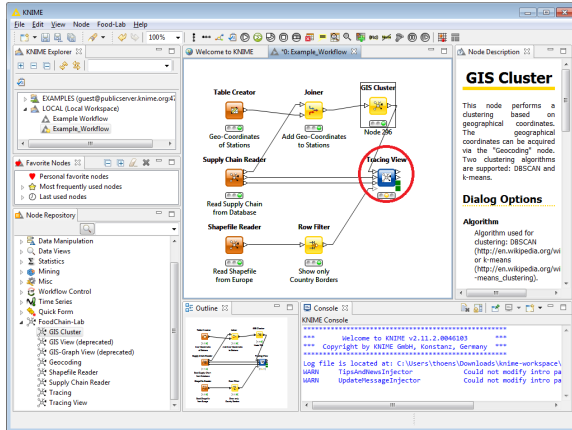
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- Right click on **GIS Cluster** to open its context menu and select **Execute** to execute the node.
- The results of the clustering are put into the **ClusterID** column. This column will be used in the **Tracing View**.

Task

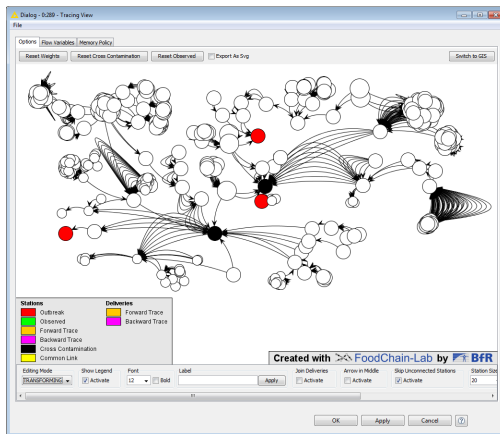
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- Open the **Tracing View** by double-clicking on it.

Task

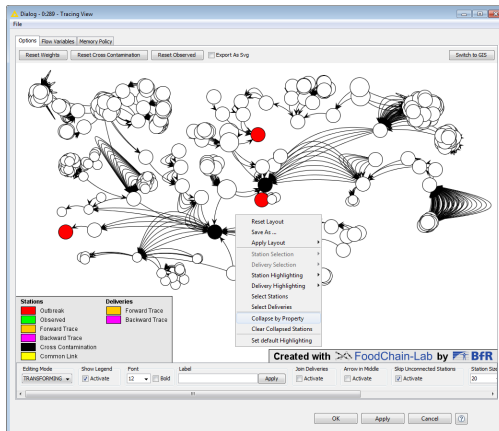
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- A window showing the delivery network should open now.

Task

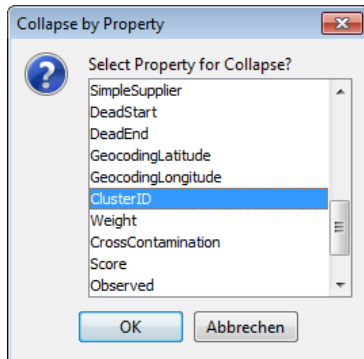
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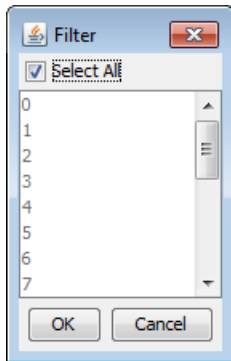
- Right click in the graph to open the context menu and select **Collapse by Property**.

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- The clustering will be done based on the results of the **GIS Cluster** node.
- Select **ClusterID** and press **OK**.



- Just press **OK**, since we do not want to exclude any area.

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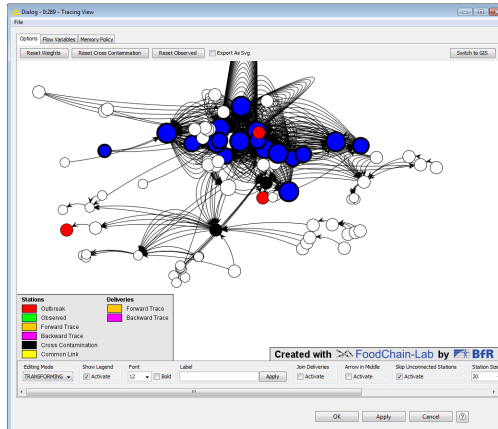
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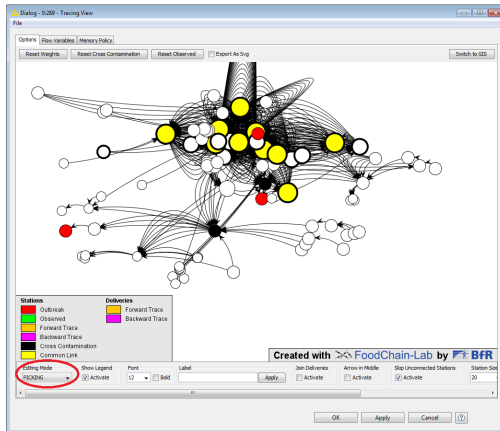
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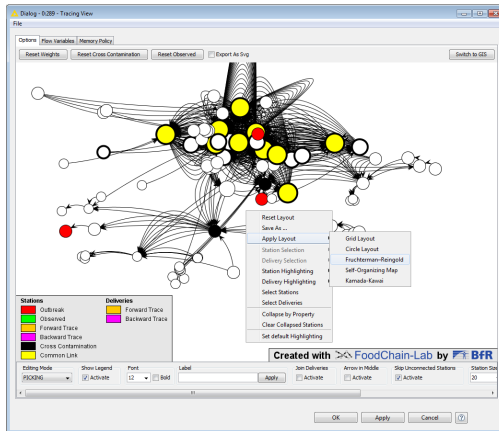
- All French stations have been clustered to areas.
- Each selected station (blue circle) is an area in France.



- Select "PICKING" as **Editing Mode** and click in the graph to unselect all stations.
- You can now see, that some of the stations are yellow. That means, that these stations (French areas) are connected to all outbreak spots (red circles).

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- Since the graph looks confusing now, we should reapply the layout algorithm.
- Right click in the graph and select **Apply Layout** > **Fruchterman–Reingold** in the context menu.

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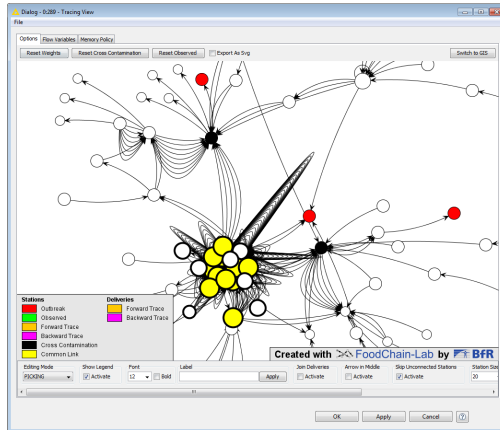
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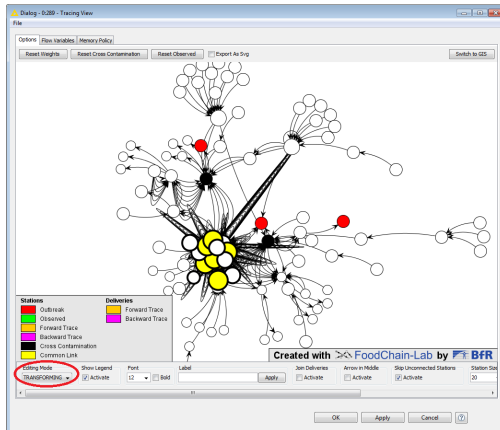
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- The stations should be arranged in better way now.
- The algorithm is not deterministic, therefore your result will look different from the screenshot.



- After applying the layout algorithm some stations might be outside the visible area.
- To see the whole graph select "TRANSFORMING" as **Editing Mode** and zoom/move the graph by using the mouse wheel and the left mouse button (works as in Google Maps).