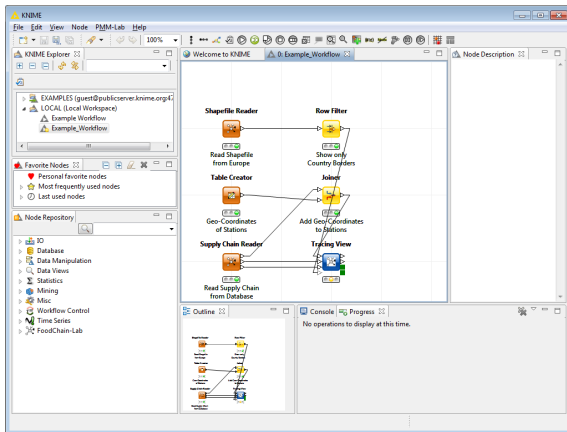
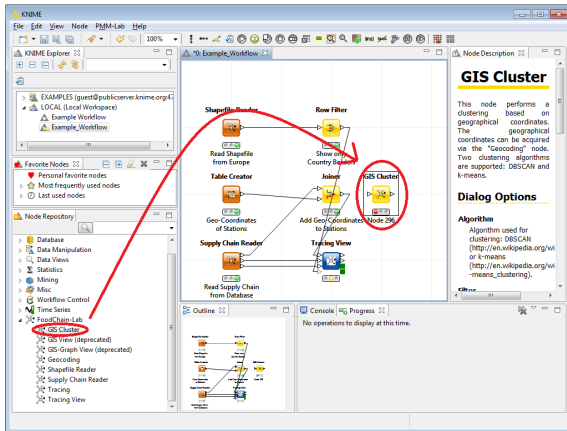


Clustering in FoodChain-Lab

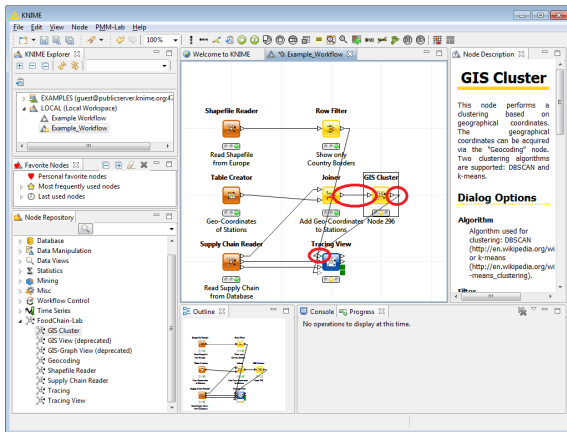
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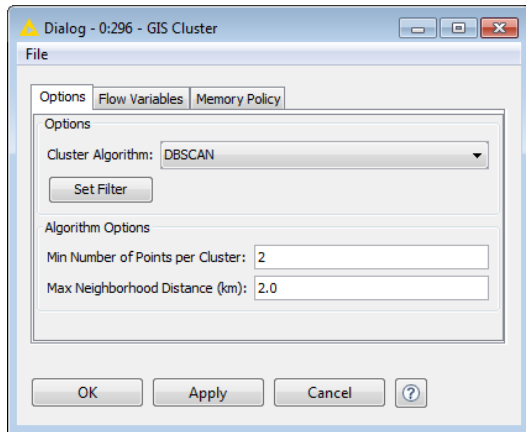
- Import the Example Workflow from https://github.com/SiLeBAT/BfROpenLabResources/raw/master/GitHubPages/workflows/Example_Workflow.zip.



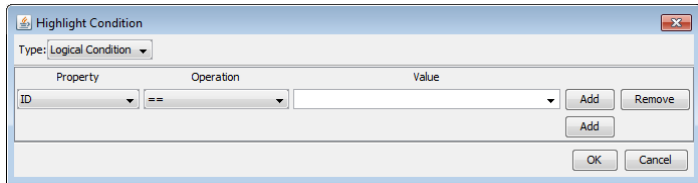
- Drag the **GIS Cluster** node from **FoodChain-Lab** in the **Node Repository** to the **Workflow Editor**.



- 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.



- You should see this dialog now.

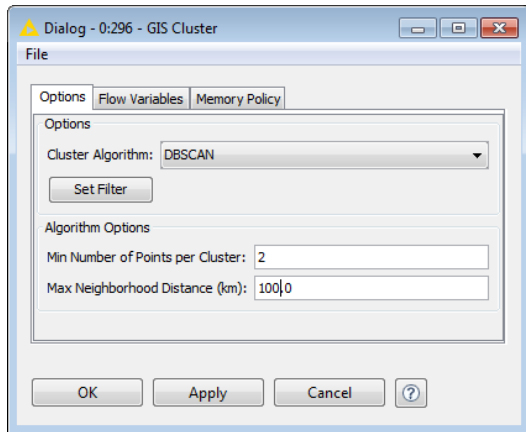
Highlight Condition

Type: Logical Condition

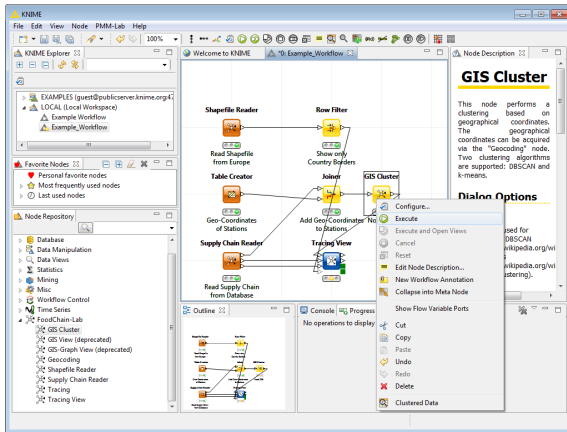
Property	Operation	Value
Country	=	FR

Buttons: Add, Remove, Add, OK, Cancel

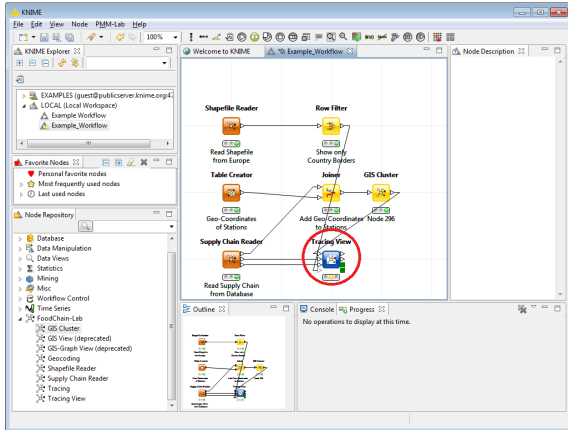
- For our clustering we only want to use the French stations, since most primary producers in this data set are French.
- Select "Country" as **Property** and "FR" as **Value** and press **OK**.



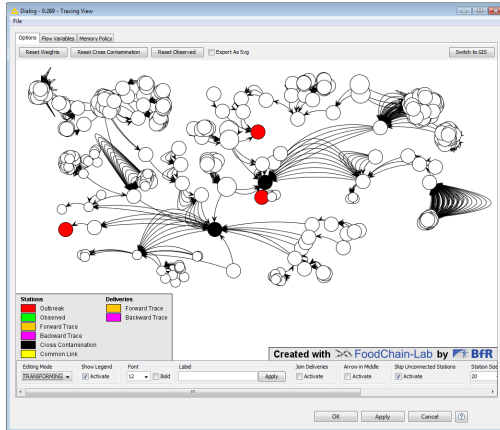
- Set the **Max Neighborhood Distance** to 100km. That means two stations with distance of less than 100km are put into the same area.
- Press **OK**.



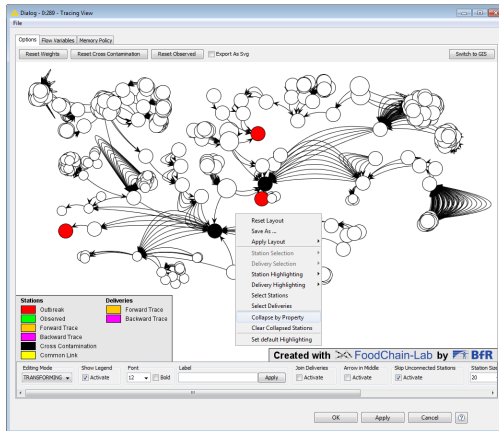
- Right click on **GIS Cluster** to open its context menu and select **Execute** to execute the node.
- The results of the clustering are put into the **Cluster** column. This column will be used in the **Tracing View**.



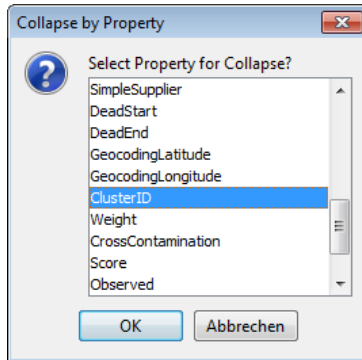
- Open the **Tracing View** by double-clicking on it.



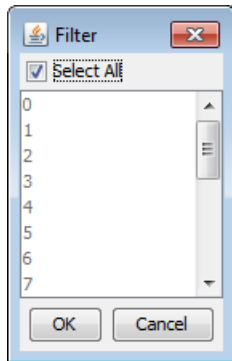
- A window showing the delivery network should open now.



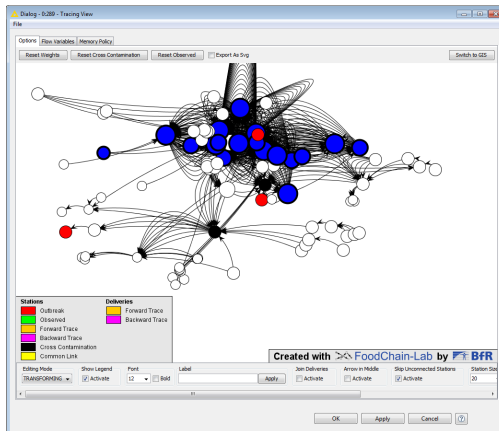
- Right click in the graph to open the context menu and select **Collapse by Property**.



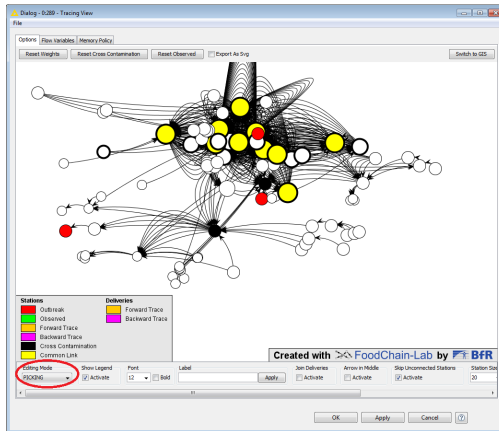
- The clustering will be done based on the results of the **GIS Cluster** node.
- Select **ClusterID** and press **OK**.



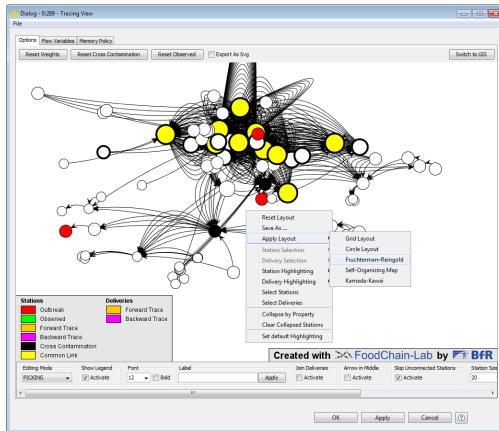
- Just press **OK**, since we do not want to exclude any area.



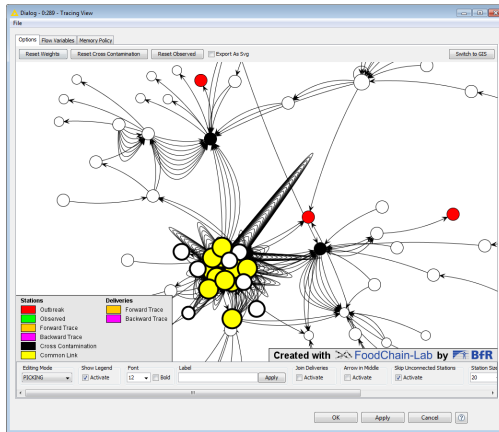
- All French stations have been clustered to areas.
- Each selected station (blue circle) is an area in France.



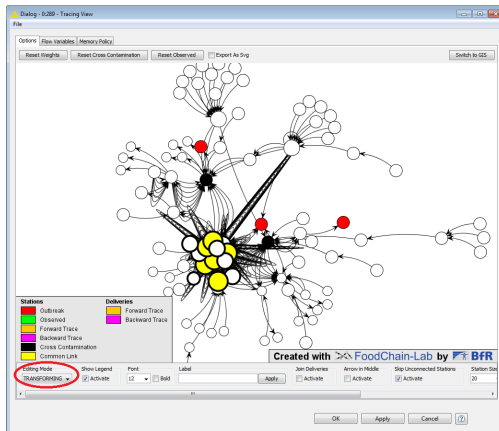
- Select "PICKING" as **Editing Mode** and click in the graph to unselect all stations.
- You can now see, that some of the stations are yellow. That means, that these stations (French areas) are connected to all outbreak spots (red circles).



- 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.



- 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.