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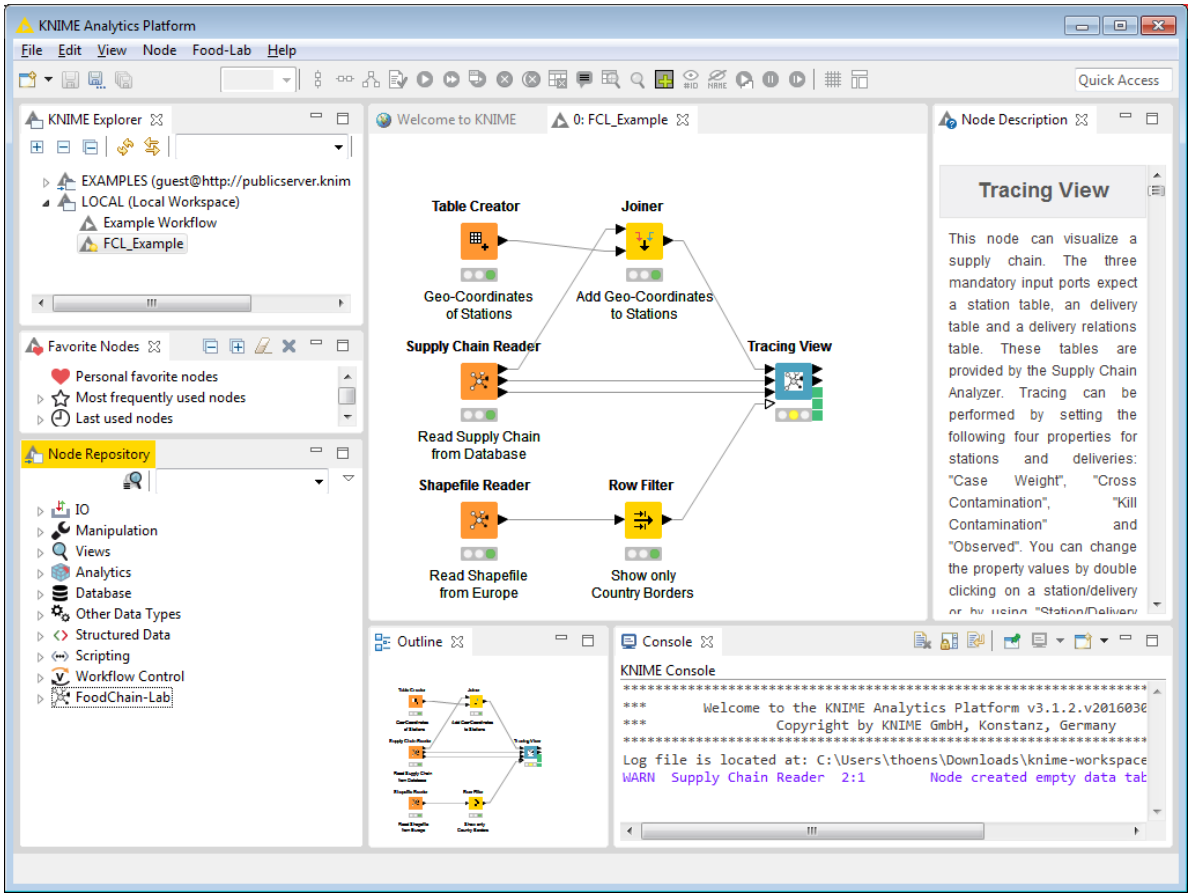
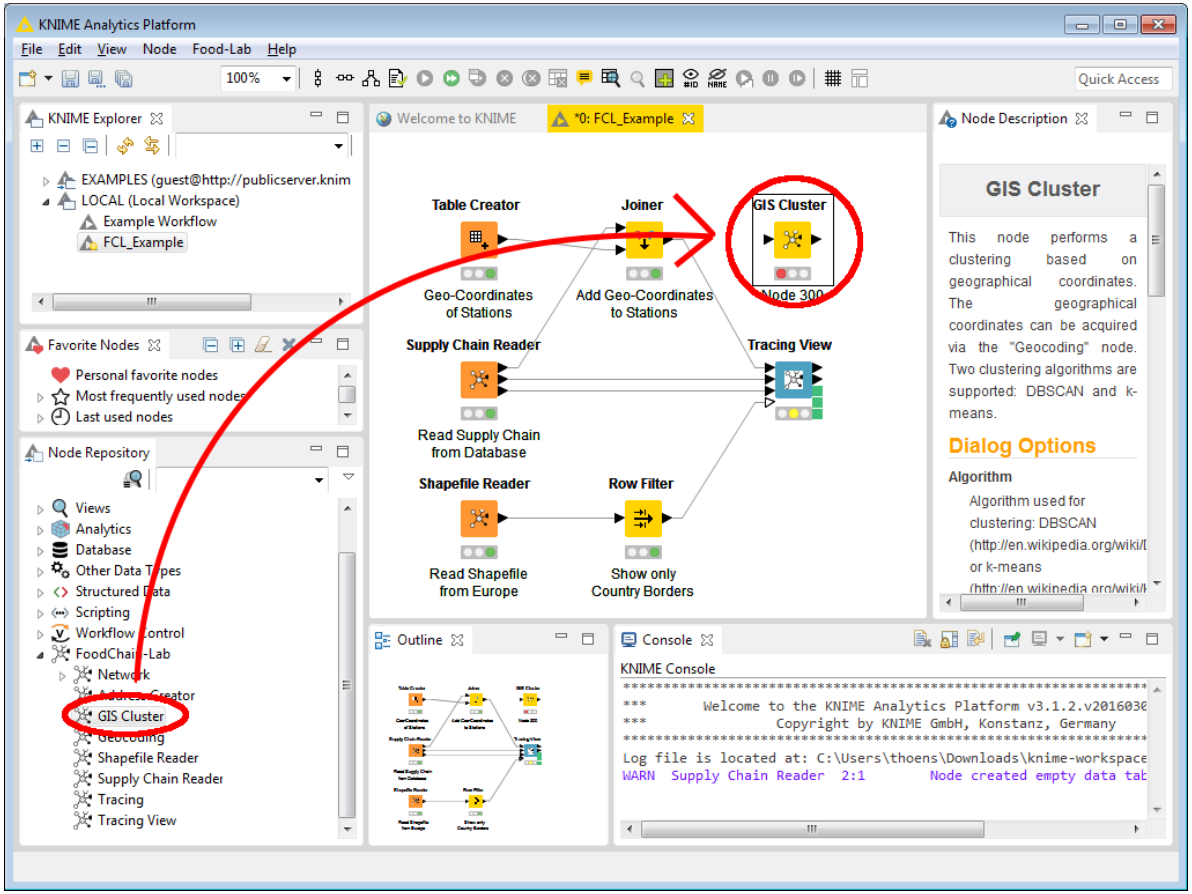
Geo-Clustering in FoodChain-Lab

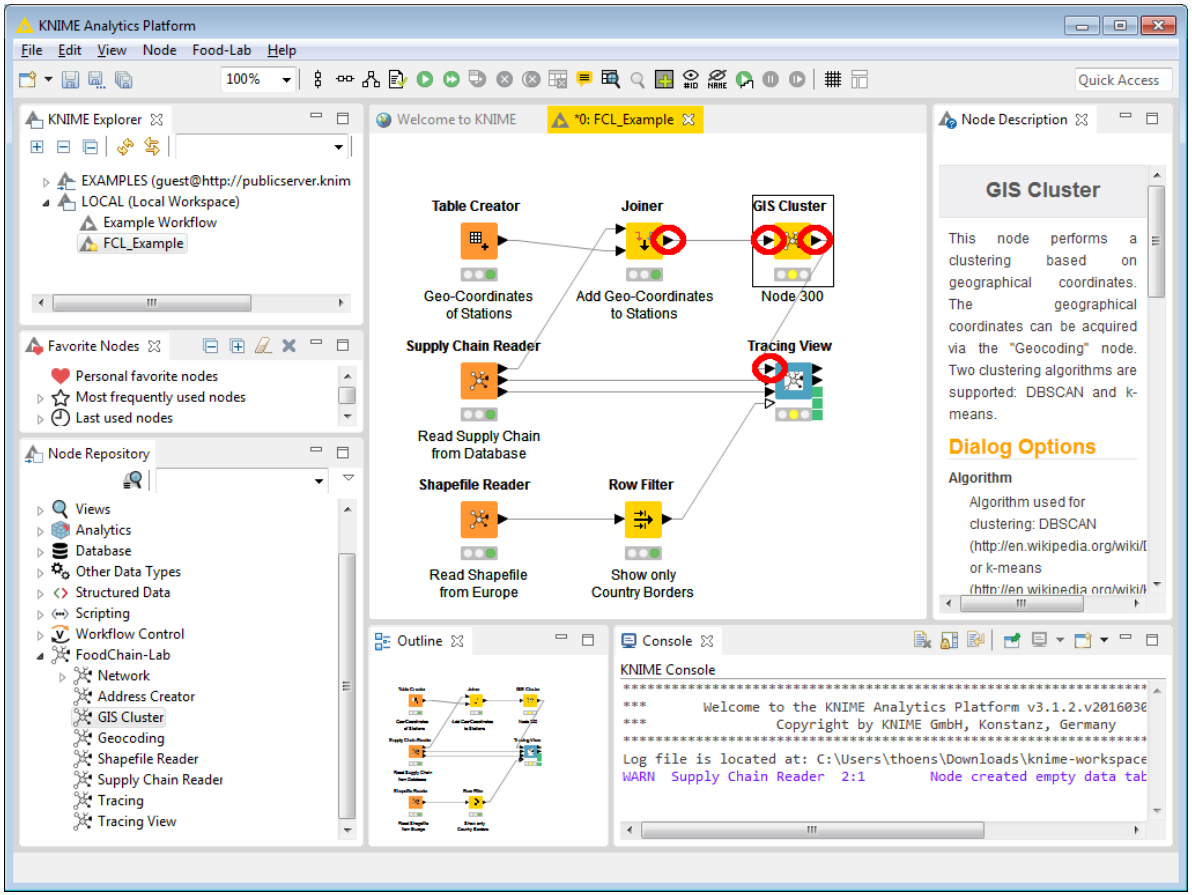
- Perform a clustering using the following workflow: `https://github.com/SiLeBAT/BfROpenLabResources/raw/master/GitHubPages/workflows/FCL_Example.zip`
- Cluster all French primary producers by using the **GIS Cluster** node.
- Use a **Max Neighborhood Distance** of 100km.
- That means two stations are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



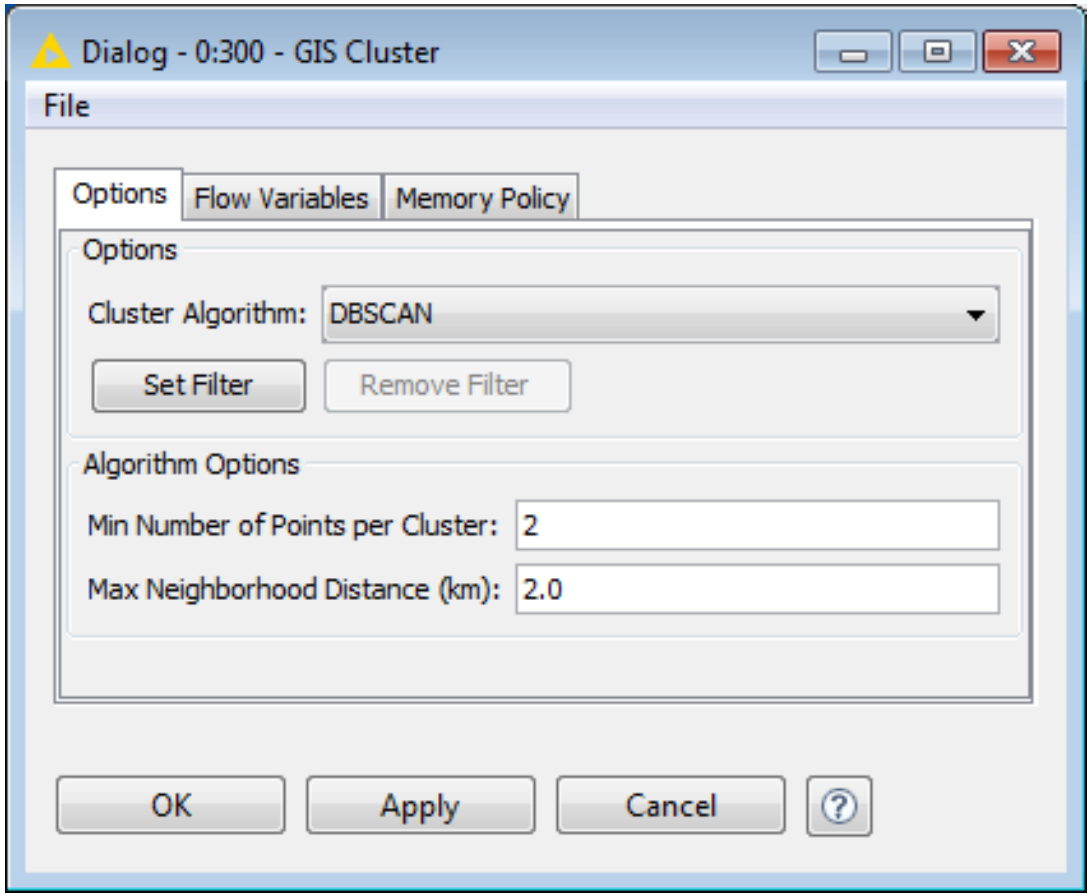
- Import the Example Workflow from `https://github.com/SiLeBAT/BfROpenLabResources/raw/master/GitHubPages/workflows/FCL_Example.zip`.



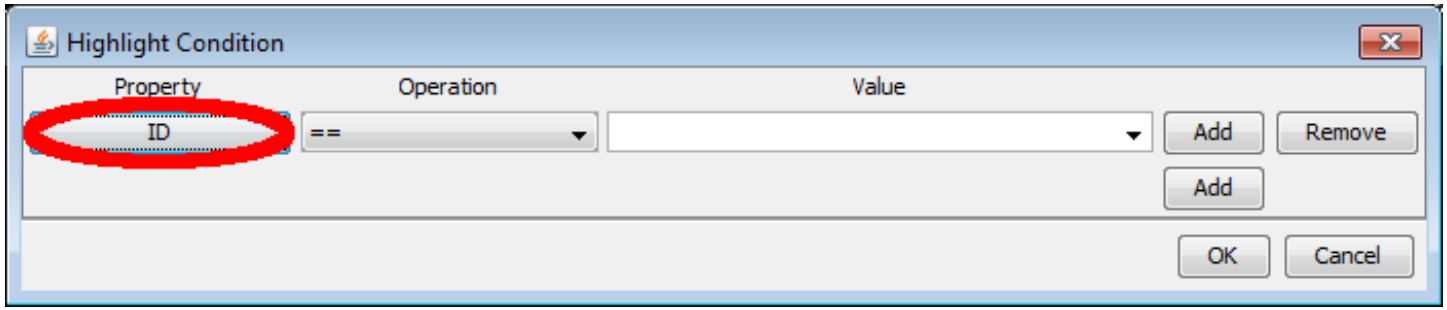
- Drag the **GIS Cluster** node from **FoodChain-Lab** in the **Node Repository** to the **Workflow Editor**.



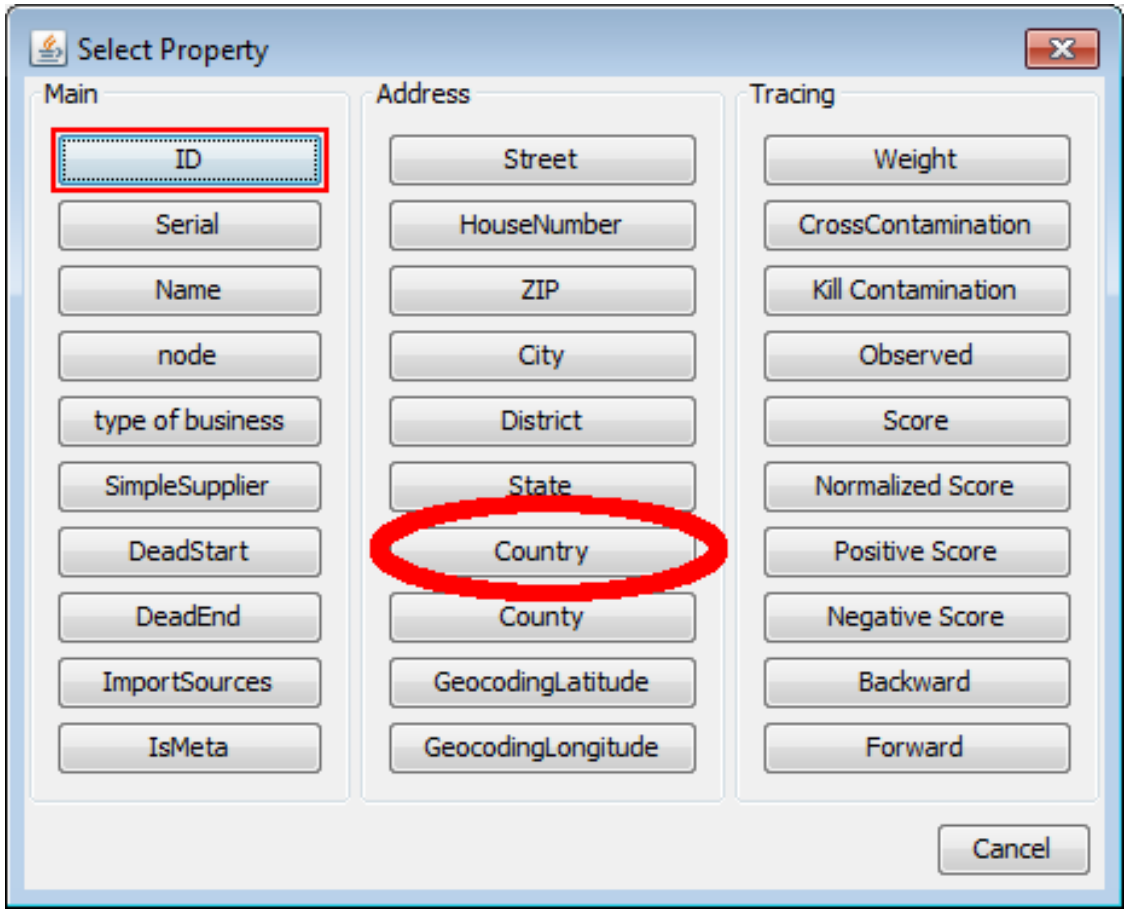
- Connect the output of **Joiner** to the input of **GIS Cluster**.
- Connect the output of **GIS Cluster** to the first input of **Tracing View**.
- Double click on the **GIS Cluster** node to open its dialog.



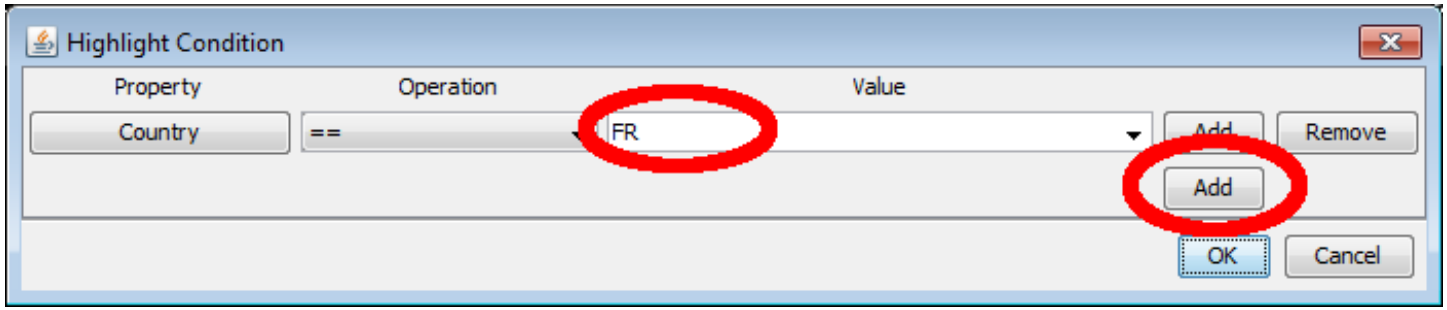
- In this dialog you can set up an algorithm for geographical clustering based on latitude and longitude.
- Click on **Set Filter** to define which stations should be clustered.



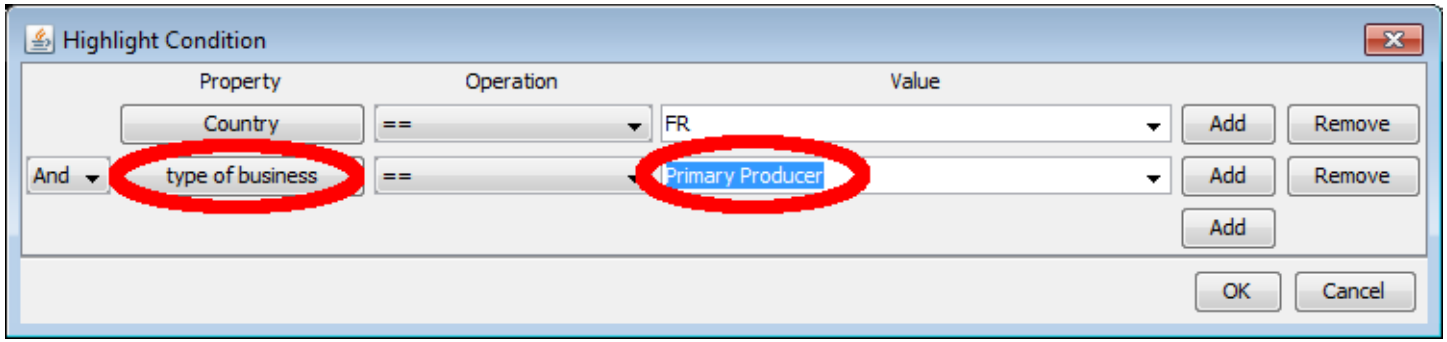
- You should see this dialog now.
- Press the button in the red circle to change the **Property** value.



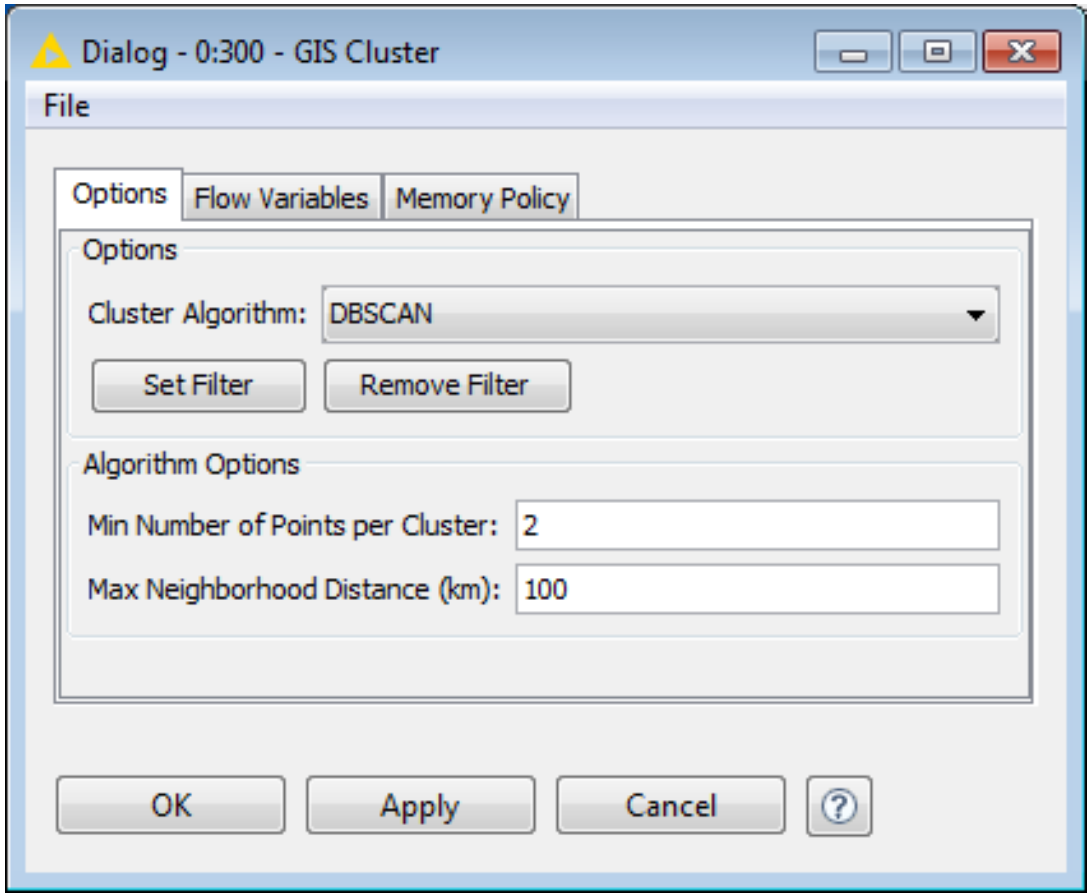
- Select "Country".



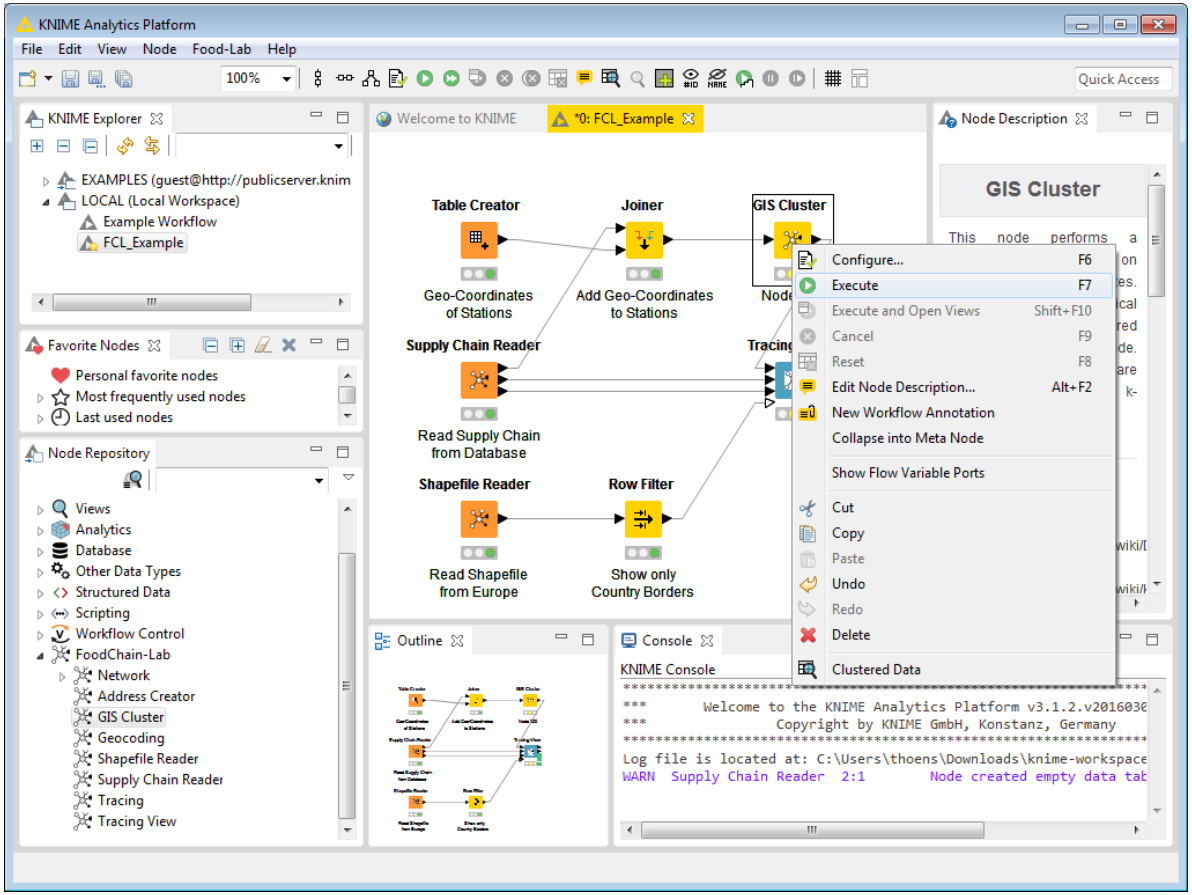
- Now select "FR" as **Value**, since we want to cluster stations in France.
- Afterwards press **Add** to add another condition.



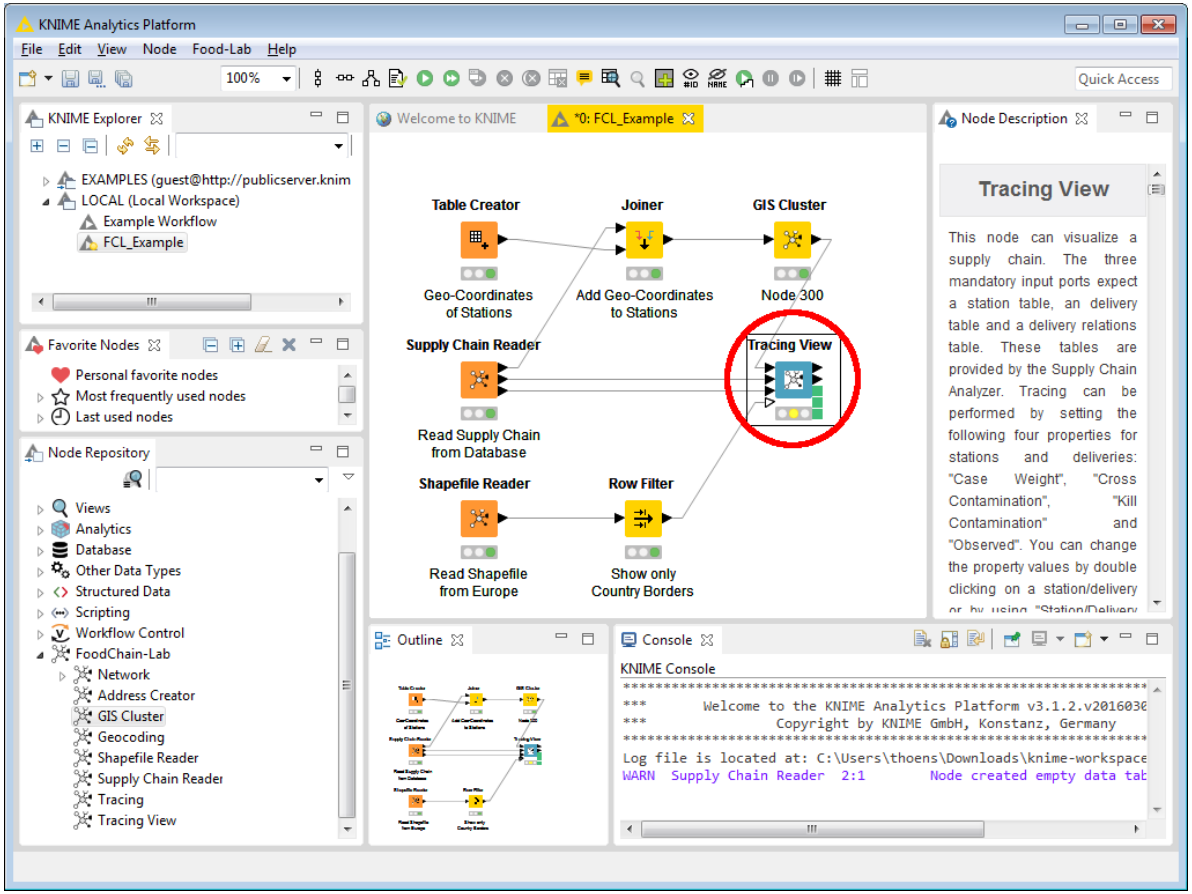
- For the new condition select "type of business" as **Property** and "Primary Producer" as **Value**, since we want to cluster primary producers only.
- Now press **OK**.



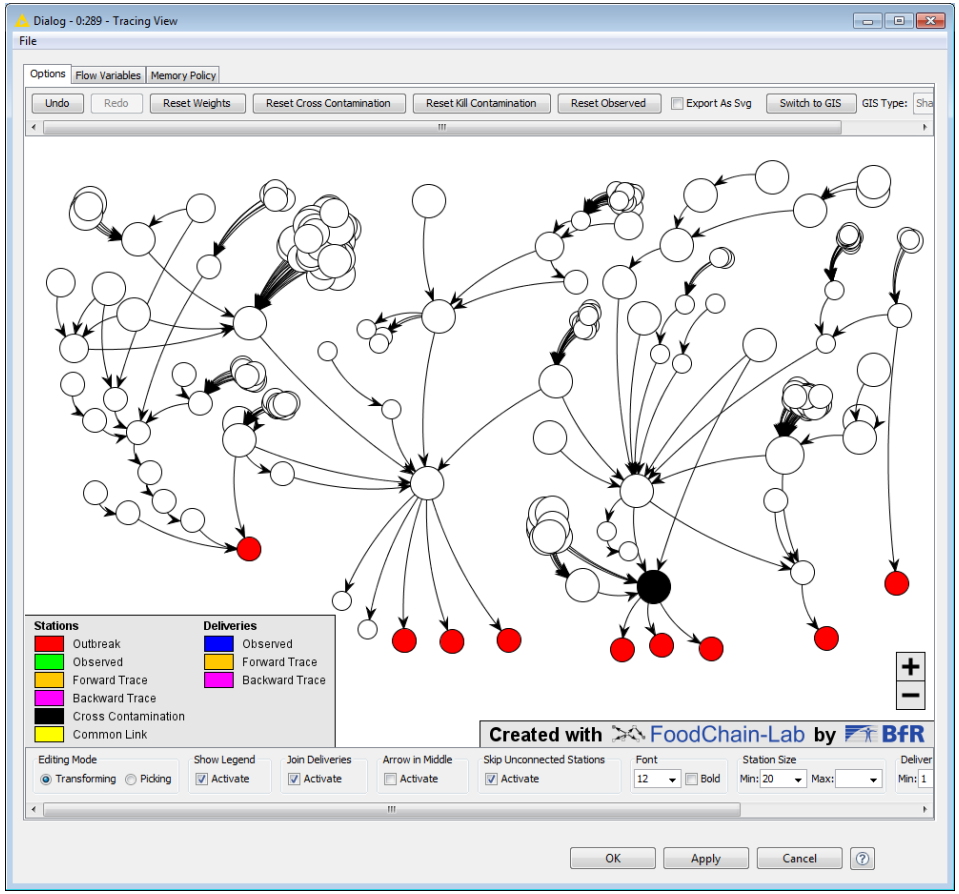
- Set the **Max Neighborhood Distance** to 100km. That means that stations with distance of less than 100km are put into the same cluster. For details on the algorithm look here: `https://en.wikipedia.org/wiki/DBSCAN`
- Press **OK**.



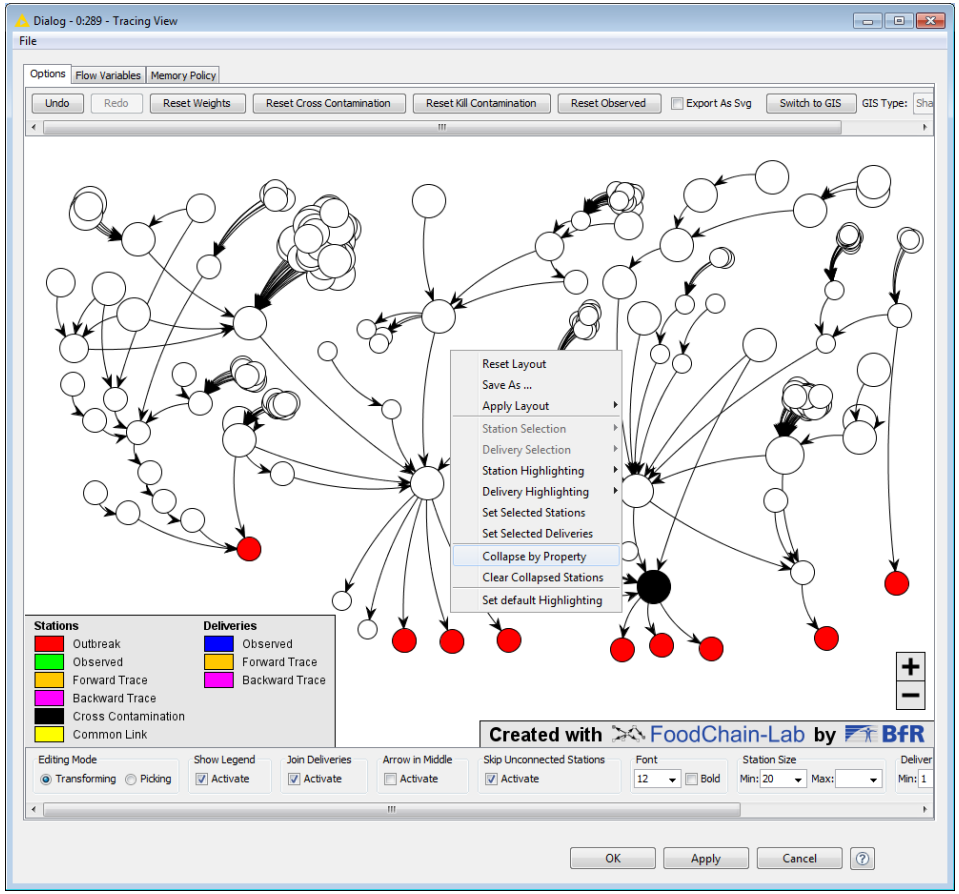
- Right click on **GIS Cluster** to open its context menu and select **Execute** to execute the node.
- The results of the clustering are put into the new column **ClusterID**. This column will now be used in the **Tracing View**.



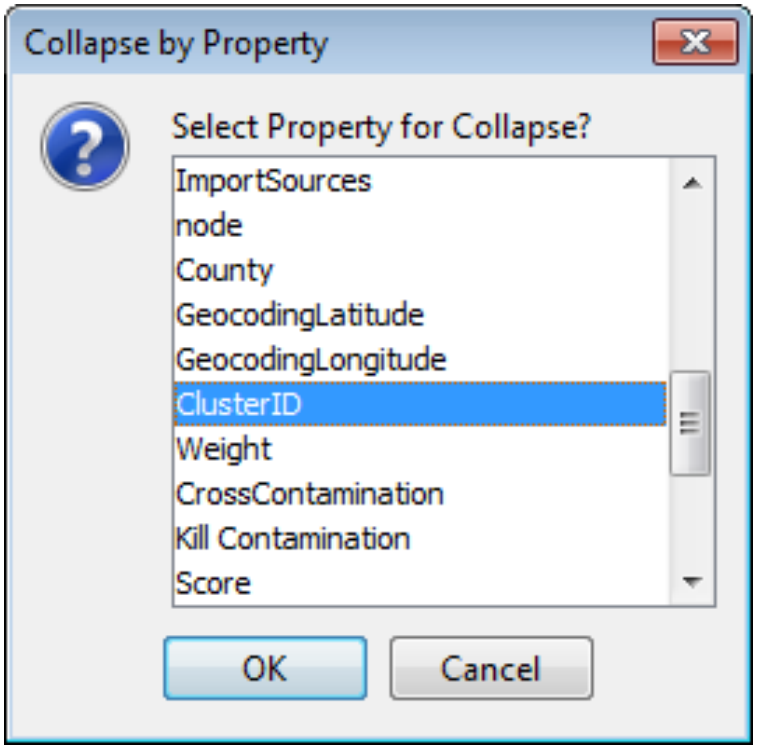
- Open the **Tracing View** by double-clicking on it.



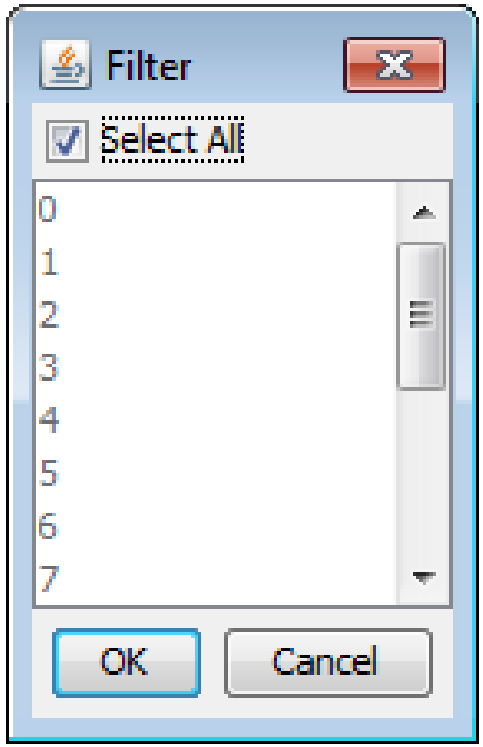
- A window showing the delivery network should open now.



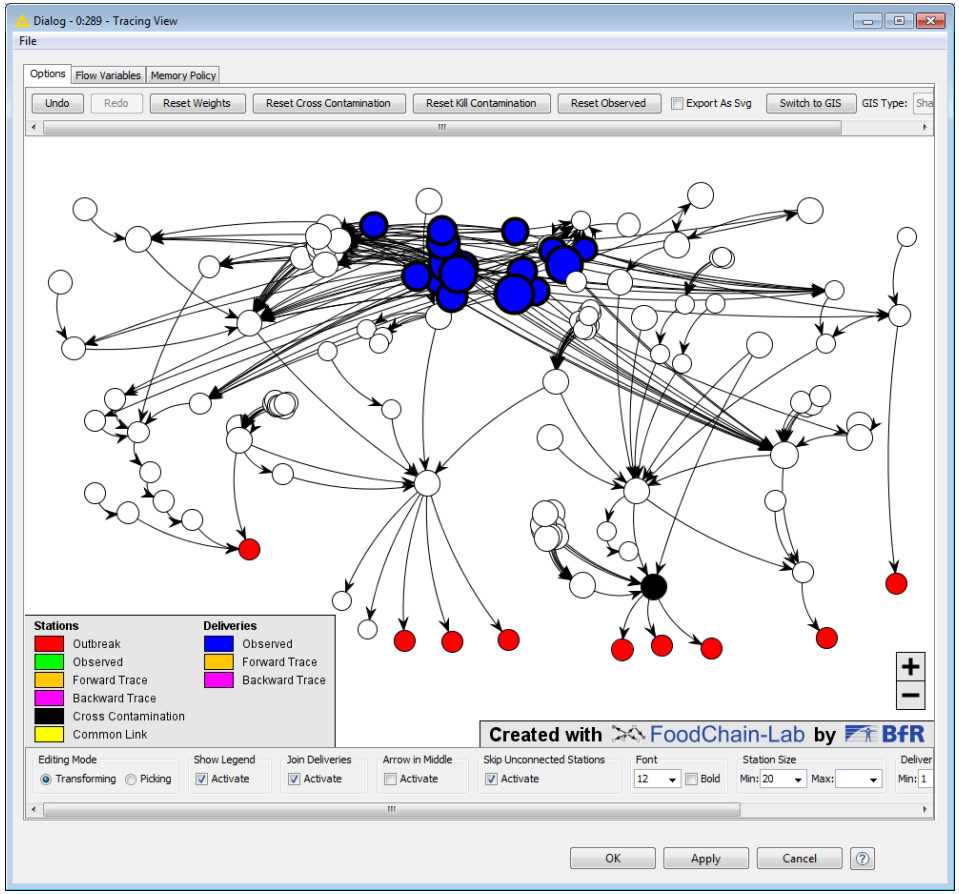
- Right click in the graph to open the context menu and select **Collapse by Property**.



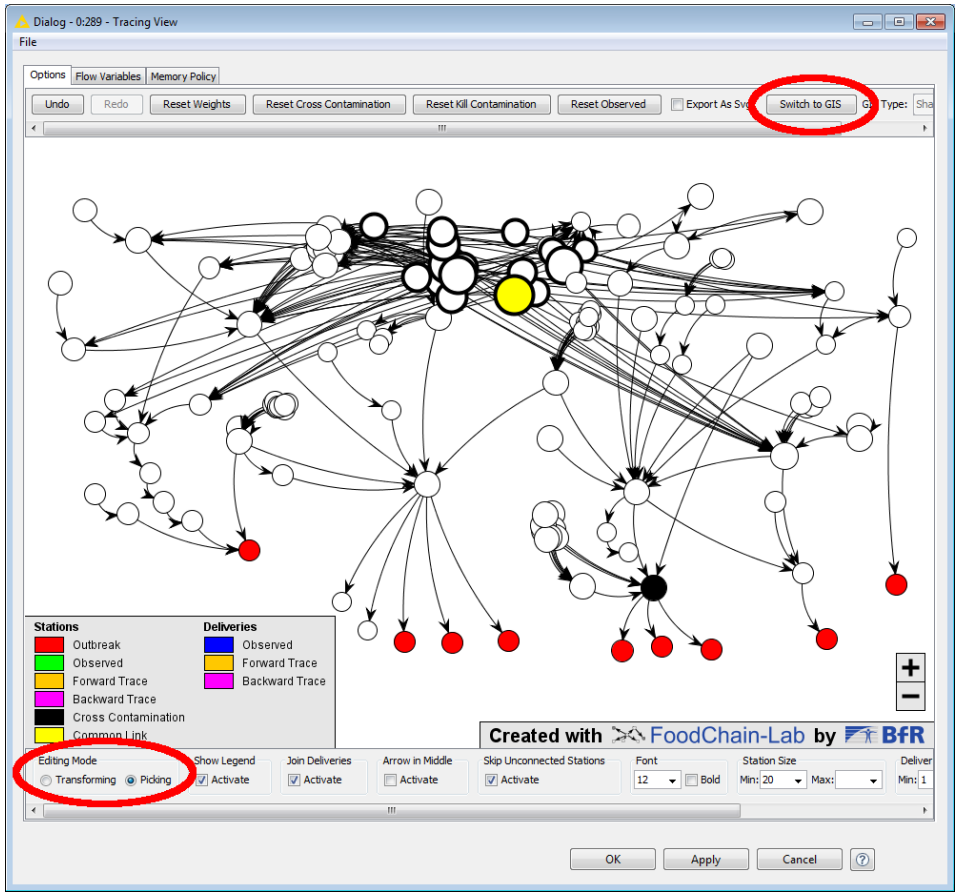
- The clustering will be done based on the results of the **GIS Cluster** node.
- Select **ClusterID** and press **OK**.



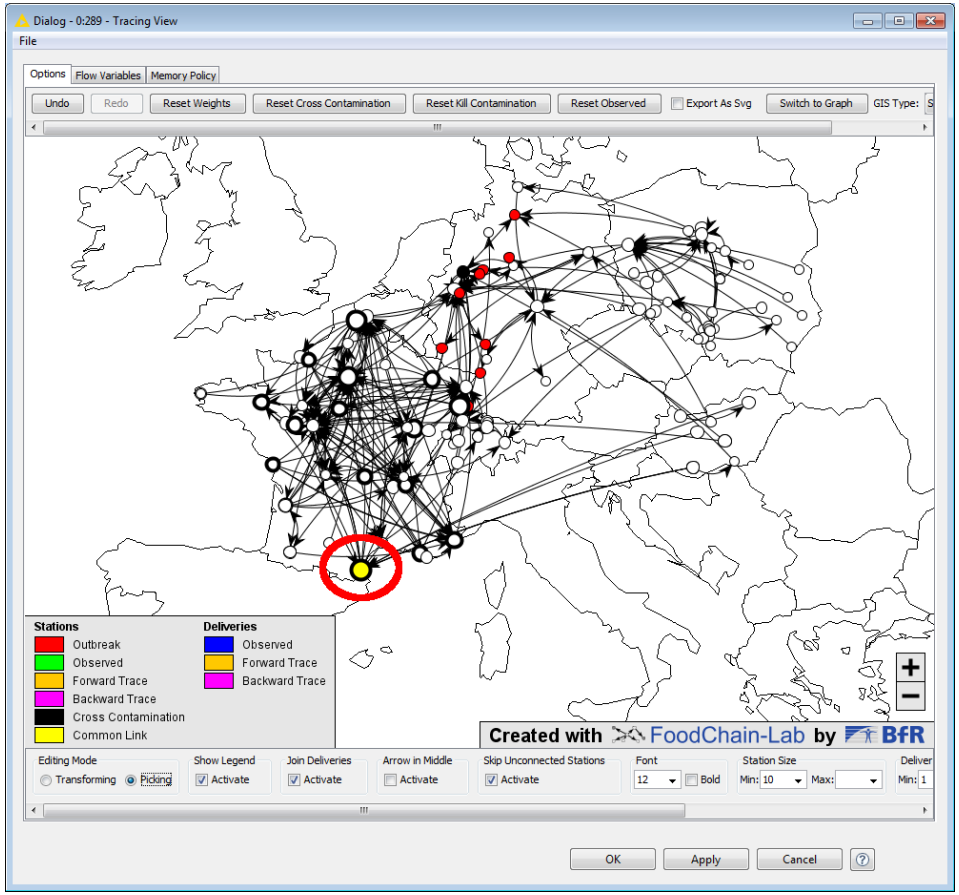
- Just press **OK**, since we do not want to exclude any area.



- All French primary producers 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 deselect all stations.
- You can now see, that one of the stations is yellow. That means, that this stations (French area) is connected to all outbreak spots (red circles).
- Press **Switch to GIS** to see where this area is.



- The area is in Southern France.