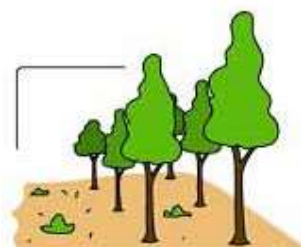


If information is representing **MITIGATION MEASURES**, mark it with 1

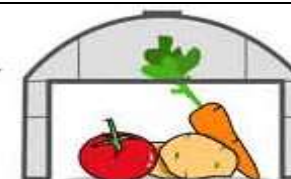
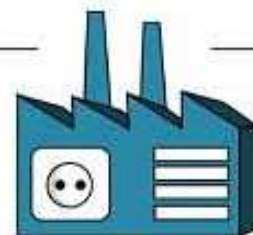
If information is representing **ADAPTATION MEASURES**, mark it with 2

Greater use of
renewable energy

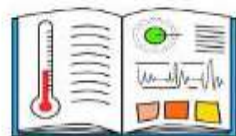


Landscape restoration
(natural landscape)
and reforestation

Electrification of
industrial processes



Flexible and diverse
cultivation to be
prepared for natural catastrophes



Research and
development on
possible catastrophes,
temperature behavior, etc.



Preventive and precautionary measures
(evacuation plans, health issues, etc.)

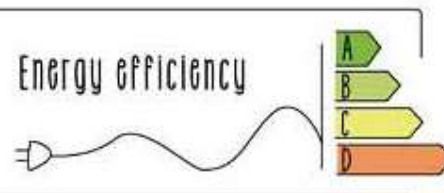
Efficient transport
(electric public transport, bicycles, etc.)



Carbon tax and
emissions markets



Energy efficiency



More secure facility
locations and
infrastructures

Mitigation and adaptation to climate change

MITIGATION

Actions to reduce and curb greenhouse gas emissions



Greater use of renewable energy



Electrification of industrial processes



Efficient transport
(electric public transport, bicycles, etc.)



Carbon tax and emissions markets



ADAPTATION

Actions to reduce vulnerability to climate change



More secure facility locations and infrastructures



Landscape restoration (natural landscape) and reforestation



Flexible and diverse cultivation to be prepared for natural catastrophes



Research and development on possible catastrophes, temperature behavior, etc.



Preventive and precautionary measures (evacuation plans, health issues, etc.)

New locks in Albertkanaal in Flanders, Belgium

The Albert canal in eastern Flanders is an important economic waterway but it experiences rare periods of low water flow, during which it is then less suitable for commercial shipping. As a consequence of climate change, the Meuse basin, which includes the canal, is projected to experience more frequent and longer periods of low water flow. This could have economic implications.

The Albert canal connects the industrial zones around Liège with the harbor of Antwerp. Ships can access both ends of the canal: via the River Scheldt to the Netherlands and via the River Meuse to France. It is an economically important waterway for Belgium, with a total traffic of 40 million tonnes/year. It also helps reduce the number of trucks on the highways by some 6 000 trucks/day, and results in less air pollution and congestion. In some, currently rare, cases, the discharge of the River Meuse is not enough to feed all the canals in Flanders and the Netherlands. During these periods, the low water level of the Albert canal means that the draft allowed for ships has to be reduced, making inland navigation less attractive as a mode of transport.

The solution to this challenge was to install large Archimedes screw pumps at six lock systems. In the case of a drought, water is pumped upstream to replace the water lost by the ships passing through the lock. In the case of an excess of water, mainly in winter, the pumps are used as a bypass and also generate hydroelectricity. The screws are also designed to enable fish to migrate freely. The first four screw pumps (4.3 m diameter, weighing 85 tons) were installed in the Ham lock system in 2012, and three screws were installed in Olen in 2013. Further screws will be installed in the lock systems of Hasselt, Genk, Diepenbeek and Wijnegem over the next few years.

The cost of installing the screws is about EUR 7 million for each lock system. The benefits include ensuring navigability of the canal under changing climatic conditions, reliability of the canal for shipping and electricity generation. A hydrological and economic analysis, including climate change, concluded that on an annual basis more energy will be generated than used. The exact annual amount of power generated will depend on amount and distribution of rainfall over the year, the future shipping intensity and the amount of withdrawal by other water users. The net effect on greenhouse gas emissions over time will depend on these same elements, but is generally favorable.