

DISSEMINAZIONE ERASMUS

**ICT IN THE CLASSROOM: INNOVATIVE TOOLS TO
FACILITATE STUDENTS LEARNING,
COLLABORATION AND CREATIVITY**

ATHENS – MAY 21ST-MAY 27TH 2023

**MAFFIOLI PAOLA – MENEGAZZO PAOLA –
SILOCCHI CINZIA**

USO DI PADLET



padlet

ENVIRONMENTAL DISASTERS

SEVESO DISASTER



The Seveso disaster was an industrial accident that took place on July 10th, 1976, 20km north of Milan in Meda, in Italy at a chemical manufacturing facility. The accident resulted in exposing residents of the area to the highest amount of 2,3,7,8-tetrachlorodibenzo-p-dioxin on record. It was

Disaster idioms and expressions

Here are some interesting disaster-related sayings to share with your class:

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CHOOSE A DISASTER - CREATE YOUR OWN PRESENTATION AND WRITE TITLE AND SOME INFORMATION HERE

Oppau explosion



21 september 1921
Oppau

Animas river



5 August 2015
Colorado, United States
Arsenic, Lead and Mercury

Exxon Valdez Oil

24 March 1989

ENVIRONMENTAL DISASTERS

CINZIA MAR 14, 2023 07:50PM UTC

Pollutant Cr +6 Luigi Stoppani

1900-2003

Cogoleto

Cr +6



Animas river

5 August 2015

Colorado, United States

Arsenic, Lead and Mercury



Exxon Valdez Oil Spill

1989

Alaska

Crude Oil



Minamata disaster

1956

Japan

Methylmercury

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Germany

Ammonium nitrate



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To **flood someone with something** is to give them too much of it. A person might be flooded with work or flooded with emails.

Even trivial things can be called a **disaster** if they go badly. A badly baked cake or an attempt to do something that doesn't go well can be referred to as – a disaster.

If a person holds in a lot of anger and then finally lets it all out they can be said to **erupt like a volcano**.

CHOOSE A DISASTER - CREATE YOUR OWN PRESENTATION AND WRITE TITLE AND SOME INFORMATION HERE

SEVESO DISASTER

The Seveso disaster was an industrial accident that took place on July 10th, 1976, 20km north of Milan in Meda, in Italy at a chemical manufacturing facility. The accident resulted in exposing residents of the area to the highest amount of 2,3,7,8-tetrachlorodibenzo-p-dioxin on record. It was named the Seveso disaster because the population of Seveso, at roughly 17,000, was the most affected of all the towns in the area. Other communities included Desio, Meda, Cesano Maderno, Barlassina, and Bovisio-Masciago. 3,300 animals in the area died within days. 80,000 animals had to be slaughtered to keep them from the food chain. Some people, including children, suffered from a skin condition called chloracne. Further health issues to those exposed included liver issues and peripheral neuropathy, increased mortality from respiratory diseases, and other serious consequences.

| Interesting The Seveso Disaster Facts:

| By 1977 the restoration and decontamination efforts had been completed.

| By 1978 the majority of compensation claims by individuals had been completed.

| The waste from the Seveso disaster was placed into waste drums suitable for nuclear waste.

| 30 years after the Seveso disaster the number of babies born with thyroid problems in the area previously exposed to the dioxin is six times higher than normal.

| Nobody exposed to the dioxin died but the health problems are still being debated.

| When the dioxin leak occurred the 3,000kg chemical cloud reached as high as 50 meters in the air. The wind carried the dioxin to nearby communities.

| It is believed that roughly 37,000 people were exposed to the dioxin. Children began to show burn-like lesions on their skin only hours after the incident but because the company did not report it people did not know what was happening.

| The company responsible for the Seveso disaster - ICMESA - did not admit to the leak of dioxin for a week following the incident. It also took another week before evacuation to begin.

| Former employees of ICMESA were sentenced to prison for periods ranging from 2.5 to 5 years in 1983.

| Following appeals only two ICMESA employees were found guilty by the Supreme Court in Rome.

| In 1982 the European Community passed new industrial safety regulations and named it the Seveso Directive. The regulations were updated in 1996 and in 2008 and are now referred to as the Seveso II Directive.

| Following the incident the area affected was divided into zones. The area known as Zone A, consisting of 110 hectares, is now a public park called Seveso Oak Forest. Zones were based on the level of contamination.

| One notable change in births following the Seveso disaster was the increase in baby girls in relation to baby boys. For 7 years after the incident 46 baby girls were born and only 28 male babies were born. The number was almost always equal prior to the incident.

| Because of the thyroid issue increase and change in birth ratios dioxin has been suggested as a possible hormone disrupter.

| Those exposed to the dioxin are thought to be more susceptible to some rare cancers.





THE ENVIRONMENTAL DISASTER

A PHENOMENON WITH A VAST IMPACT ON THE
ENVIRONMENT

ANIMAS RIVER

5 AUGUST 2015 AT
10:30

3.8 MILLION GALLONS OF
WASTEWATER FROM A
COLORADO GOLD MINE WAS
MISTAKENLY DISCHARGED
INTO THIS RIVER



EPA IS THE US
ENVIRONMENTAL
PROTECTION
AGENCY

THE GOLD KING MINE



THE WATER OF THE RIVER
HAVE TURNED A BRIGHT
YELLOW-ORANGE. THE
ALARM EXSPECIALLY FOR
THE NAVAJO NATIVE
AMERICAN COMMUNITY

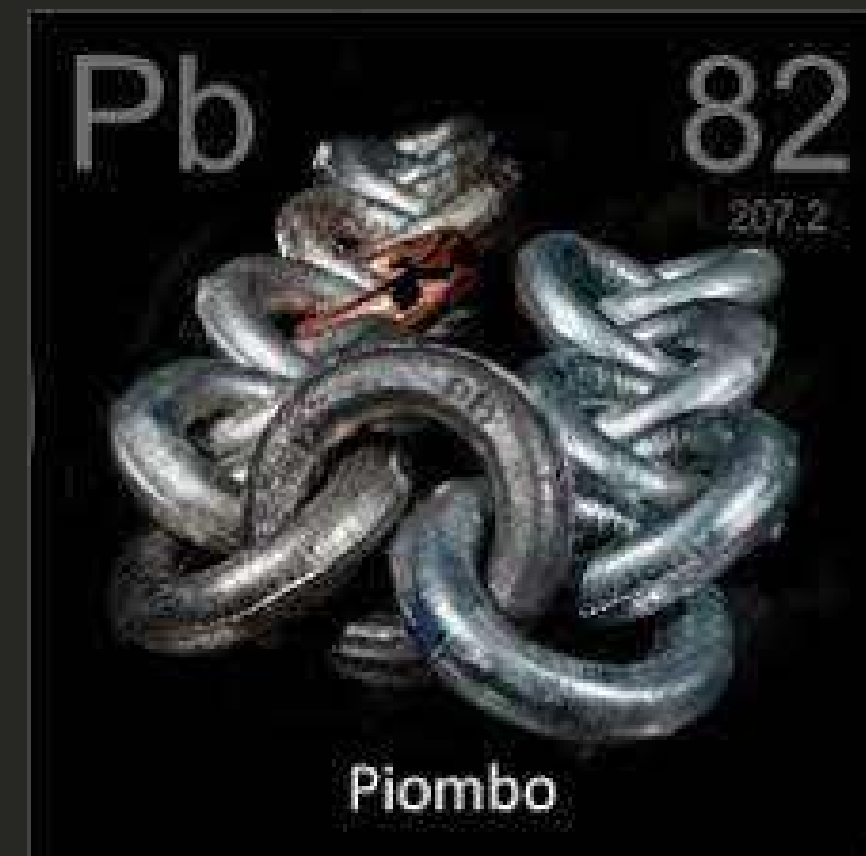
THE ACTIONS OF THE CITY

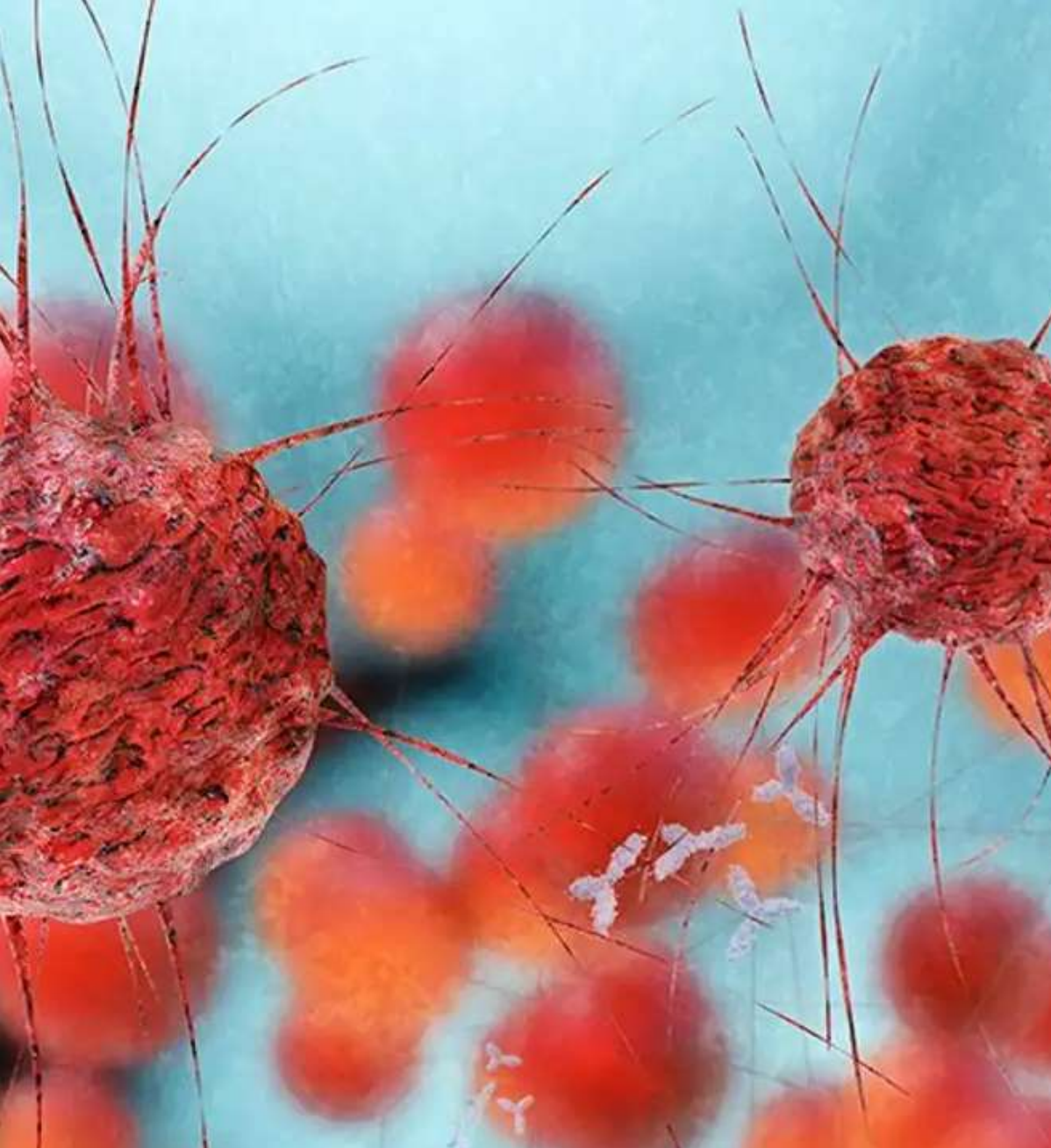
THE CITY OF DURANGO
DECIDED TO BAN ACCESS TO
THE RIVER BY DECLARING A
STATE OF DISASTER.
THERE WERE SIMILAR
EVENTS IN 1974 AND 1978.



THE CHEMICAL ELEMENTS

THE BIG PROBLEM WAS THE PRESENCE
OF THESE THREE HEAVY METAL.
THEIR LEVELS WERE HIGHER THAN THAT
PERMITTED BY THE EPA.
HOW CAN WE ANALYSE THESE METAL?
THE ANSWER IS...AAS (ATOMIC
ABSORPTION SPECTROPHOTOMETRY)





THE EFFECTS ON HEALTH



THE ACCIDENT HAD SERIOUS CONSEQUENCES ON THE HEALTH OF THE HUMAN, BUT NOT ONLY, ALSO FOR THE ANIMALS. IT CAUSES CANCER, PROBLEM IN CHILDREN...



TOXICOLOGISTS ARGUE

HEAVY METALS ?

ONLY AFTER 10 DAYS...



...STARTED
AGAIN THE
ACTIVITIES
LIKE
KAYAKING

ALL THIS SHOULD OPEN OUR EYES TO THE FACT
THAT MINES ARE NOT AN OBJECT THAT CAN BE
TAKEN AND FORGOTTEN ONCE THE WORK IS
FINISHED, BUT RATHER THAT THEY REPRESENT A
RISK FACTOR TO BE KEPT UNDER CLOSE
OBSERVATION.

WEBSITES:

- [HTTPS://WWW.LIFEGATE.IT/FIUME-ANIMAS-COLORADO-GIALLO-EPA](https://www.lifegate.it/fiume-animas-colorado-giallo-epa)
- [HTTPS://SPGEOLOGY.WORDPRESS.COM/2015/08/13/CATASTROFE-AMBIENTALE-IN-COLORADO-U-S-A/](https://spgeology.wordpress.com/2015/08/13/catastrofe-ambientale-in-colorado-u-s-a/)
- [HTTPS://VIDEO.CORRIERE.IT/USA-FIUME-DIVENTA-ARANCIONE/6382CDA2-3D3F-11E5-A2F1-A2464143B143](https://video.corriere.it/usa-fiume-diventa-arancione/6382CDA2-3D3F-11E5-A2F1-A2464143B143)
- [HTTPS://IT.WIKIPEDIA.ORG/WIKI/DISASTRO_AMBIENTALE](https://it.wikipedia.org/wiki/Disastro_ambientale)

MARIA VITTORIA SOLENNE

5°AA

12/04/2023

THANK YOU



Oppau explosion

1921

ERICA TENCA

OVERALL VIEW

TYPE: accident

CAUSES: human error

DATE: 21 September 1921

STATE: Germany

LOCATION: Oppau, Badische
Anilin und Soda Fabrik

DEATHS: 565

WOUNDED: 1,977



EVENTS

The B.A.S.F. in Germany, it had begun producing Ammonium Sulphate in 1911,

during the First World War, it had also begun producing Ammonium Nitrate

Ammonium nitrate was highly hygroscopic, the mixture of sulphate and nitrate, hardened by the pressure of its own weight, needed to be crushed and detached from the walls of the deposits with unorthodox but effective methods.

Ammonium Nitrate was a highly explosive substance already widely used as such in the First World War, but tests conducted in 1919 had certified that the Ammonium Nitrate mixture should not exceed 60% of the total volume to be considered sure

On the morning of 21 September, the workers went to work as they did every week

It's 07:32, the bomb squad chief presses the button of the electric exploder, the circuit closes. They are two gigantic explosions that tear through the air.

The shock wave reaches the center of Oppau,

CONSEQUENCES

1,550 meters from Point Zero, razing 1,036 buildings

At the Ludwigshafen factory, workers have their windows blown out in their faces as frames and roofs are ripped off.

tiles rain down on the street, glass blows and the earth shakes.

80% of the buildings have been destroyed and the 20% made unusable.

At Point Zero, all that remains is a crater

A hot sphere hit everything and everyone, pulverizing people, animals and structures

A chilling scene is presented to the rescuers




Minamata disaster



Chisso Corporation



Active from 1932 to 1968
Released very big quantities of acetaldehyde and mercury into the water



The population feeds mainly on fish, as well as cats, dogs and birds: was the diet based on contaminated fish that caused the intoxication with unknown effects.



Loss of coordination, weakness, muscle pain, hearing impairment, slurred speech, coma and death.
Over two thousand people died and thousands more sustained crippling injuries.
Children born in those years affected by deformations, blindness and deafness.



Compensation to the victims, fisheries control and reclamation projects followed as a result of the event.
In 2013 the United Nations signed the Minamata Convention, the main objective of which is the protection of human health and the environment from anthropogenic emissions of mercury.



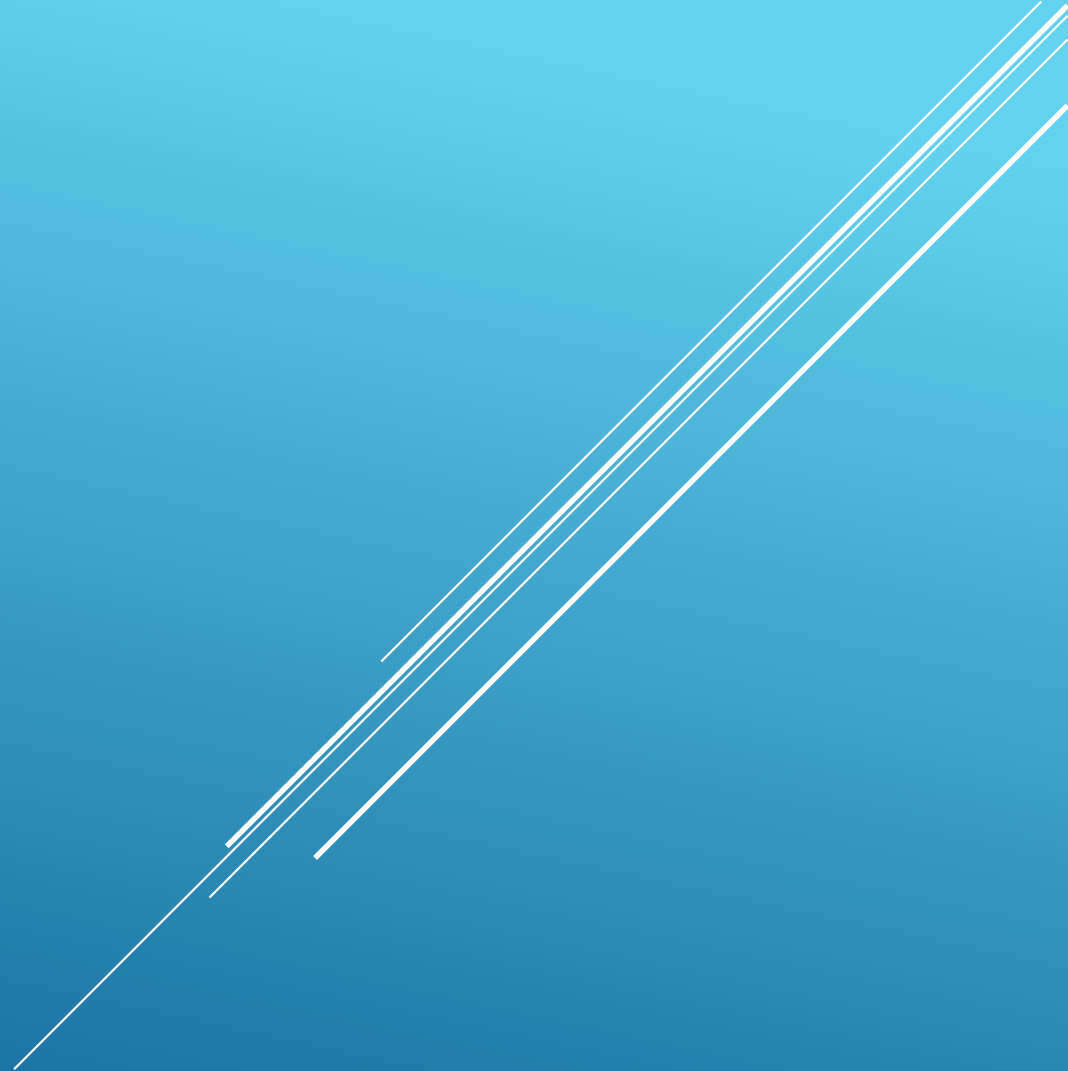
The first signs of the disease were noticed in cats: they moved abnormally and spun around without stopping.



Unknown contagious epidemic:
It was decided to quarantine patients
Research on patients only started in 1956
The first analysis of the water was done and everything was understood

POLLULANT CR+6 LUIGI STOPPANI

Francesco Ragnoli



WHERE? WHEN?

Cogoleto
1900-2003



WHAT DID THEY PRODUCE?

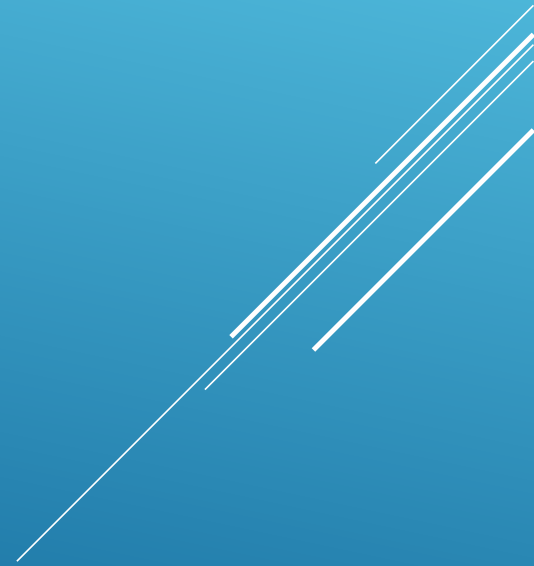
The plant produced compounds of chromium, mainly hexavalent: chromates and dichromates of sodium and potassium, chromic acid and sodium sulfate.



ENVIRONMENTAL DISASTER

92,000 m³ of toxic sludge stored

concentrations of hexavalent chromium in groundwater 64,000 times higher than the limit.



THE EFFECTS ON HEALTH

causes ulceration and perforation of the nasal septum, respiratory problems, skin rashes, weakened immune system as well as damage to the stomach, liver and lungs



SEVESO DISASTER

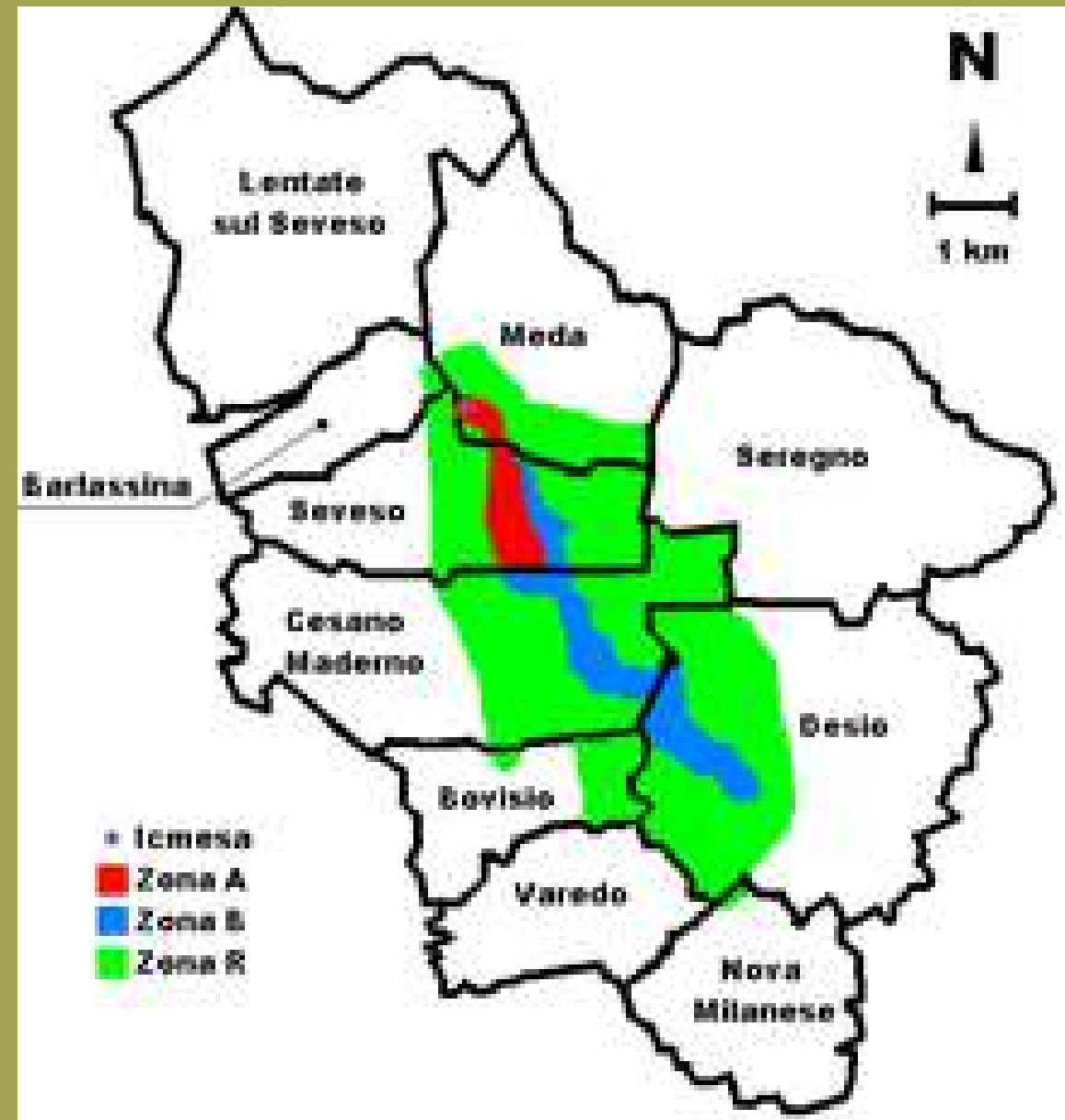


10 JULY 1976 AT 12:37

CHEMICAL EXPLOSION
NEAR SEVESO WITH
HIGHT LEVELS OF TCDD

THE THREE AREAS

This area was divided into three zones: B, R, A. The zone A was the first part near the disaster, in red in the picture.



ICMESA

It was the company responsible for the Seveso disaster that did not admit to the leak of dioxin for a week following the incident. Former employees were sentenced to prison for periods ranging from 2.5 to 5 years in 1983.



This disaster created problems for the animals, 3,300 of these died within days, other had to be slaughtered, but for the people...



PROBLEMS FOR HUMANS

There were a lot of consequences for the people that lived there, in particular for the zone A and for the children.

HEALTH EFFECTS

Chloracne, liver and immune function and tooth development

REPRODUCTIVE HEALTH OUTCOMES

Male and female fertility

CHRONIC HEALTH OUTCOMES

Cancer, diabetes, cardiovascular disease, thyroid, abortion and neonatal thyroid hormone

THE EFFECT ON THE PEOPLE

Stefania Senno is the symbol of this disaster and the consequences of Chloracne

Before

After



Diagnostic tests





WHAT TO REMEMBER



An environmental disaster, such as the one in Seveso, is clearly devastating to the local population and introduces potential long-term ecologic, economic, and health consequences both physical and psychological.

MY SITES

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6221983/>

https://it.wikipedia.org/wiki/Disastro_ambientale

MARIA VITTORIA SOLENNE

5°AA

12/04/2023

*Thank
you*

