



Swisafe©Tank





WATER

One of the Millennium Development Goals drawn up by the WHO (World Health Organization) is to halve the percentage of people without access to drinkable water. Since the end of 2011, 89% of the world population uses safe source of drinkable water, while 55% has water directly into their home. Despite this important result:

***The lack of safe water sources causes tens of thousands of deaths every day, especially children.
Million people die every year.***

DATA

768 million people (source: Unicef) are still without access to safe water sources; of these people, **185 million are using surface water** for their daily needs.

1 billion 300 million (source: WHO) are people who do not have access to safe water sources.

1.700 children die every day (620.000 a year: data 2012) from diarrheal diseases closely related to contaminated water. The 80% of children who die every day from diarrheal diseases are less than two years old.

In many areas of the world, between **30 and 70% of the population does not have clean water**. Every minute a newborn child dies from infections due to poor hygienic conditions. In South Sahara the right to water is denied to 4 in 10 people, causing the diffusion of diarrhea, cholera, typhoid, which become lethal if not treated in time (Source WHO).

In 2011, a total of **1 billion (15% of the world population)** of people are forced to *defecate outdoor*; *90% of the defecations take place in rural areas*. In 27 countries, more than ¼ of the population, defecates outdoor.



WATER COLLECTION: CONTAINERS



The water is collected in containers such as jerrycans, basins, buckets, bottles, flasks and tanks, both from so-called "safe" and "unsafe" water sources.

For simplification, we will generically call these containers, "*normal*."

The collection of water from the so-called "safe water", the transportation and the storage in these "*normal*" containers, represent a "paradox" because ***they do not exclude the bacterial contamination.***



THE PROBLEM OF “NORMAL” CONTAINERS – RECENT LABORATORY STUDIES

The “normal” containers used for the collection of water, are not hygienically suitable for the purpose. They are dirty, often worn or broken, are not disinfected and are “loads” of dangerous bacteria; they are vehicles for bacterial proliferation, or rather to say, they already have themselves, a source of potential transmission of infections and diseases, both the water is collected from “safe or unsafe” water sources.

Recent studies conducted by university researchers, showed that drinking from a plastic container which has been reused several times without any previous disinfection, *can infect and sicken a human being in 60% of cases.*

After a week of re-use, ***the container brings a superior bacterial position to that we can find in a toilet bowl (wc).***

In “normal” containers (both internally and externally) lurk germs, bacteria and microorganisms that daily come in contact through:

- the simple contact with the hands;
- the sweat;
- the source of collecting;
- the free bacterial movement (the bacteria that run in the environment);
- the high temperatures;

All these factors, help the proliferation of bacteria already after 20/25 minutes, with an exponential growth.

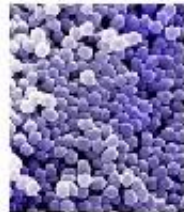
The researchers noted that after one day, the bacterial load is there in the “normal” plastic containers equal to ***313,000 bacterial colonies per square centimeter.*** After one week there are more than ***300 billion colonies of bacteria,*** capable of infecting and severely sicken a human being. ***The containers become one of the key factors if you want to “reduce” the damage (disease and infection) caused by the proliferation of bacteria, microorganisms and fungi.***



THE PROBLEM



NORMAL TANK



AFTER 20 MINUTES



**WATER CONTAMINATED
BY BACTERIA**





THE "PARADOX": WATER COLLECTED FROM "SAFE" SOURCES WITH "NORMAL" CONTAINERS

These studies demonstrated *it is a matter of greatest importance, disinfect every day the plastic container used to collect water*; this is to limit the "**risk**" to get in contact with bacteria really dangerous for life.

In countries where diarrhea and other gastro-intestinal diseases cause millions of deaths per year, the "*normal*" containers, used every day (dirty and full of bacteria) exponentially increase this "**risk**".

The paradox lies in this: even though you collect drinking water from "safe water" (wells, public water supply and reservoirs), **a "*normal*" container becomes the primary source of bacterial proliferation.**

The water collection loses its potability because of the bacteria inside the container.

The bacteria proliferate from 20 ° / 25 ° (Celsius) and **every 20 minutes bacterial colonies multiply**; after a few hours the bacteria that *have colonized the water are millions (after 6 hours of growth, 1 bacterium reproduced 26,214,000 bacteria).*

So much effort to collect drinking water, to drink it "unhealthy" with serious consequences for health.

The unsuitable conservation of drinking water in some cases can cause anemia, kidney failure and infections to organs.

These diseases have tragic consequences and, in many cases, **are lethal.**

The "normal" plastic containers are "harmful" because they allow the "proliferation of fungi and bacteria", whether they are used to collect water from "safe sources" or not.





THE “DISEASES OF POVERTY”

In Western countries these are virtually nonexistent.

In countries where the access to drinking water, to medicines and to health facilities is limited, and the domestic and environmental context is not properly adequate, *the diseases caused by poverty* are the reality of their everyday life.

Diseases Caused by poverty, account for 45% of pathologies and related costs.

The World Health Organization has identified and defined what are these diseases:
Tuberculosis, Malaria, AIDS, Childhood diseases, *Diarrheal diseases*, Respiratory infections.

They are all treatable or preventable diseases, through appropriate behavior, healthy lifestyles and medical treatments that are existing and economically sustainable.

In many cases, it would be enough to reduce or even eliminate the "diseases caused by poverty" from the Earth; It would be enough to distribute drugs, vaccines and ***suitable containers*** to the people who need them.

Obviously, it is crucial to sensitize the public with awareness-raising activities. Information and education are the keys to prevent such serious diseases.



BACTERIAL PROLIFERATION: DIARRHEA AND DYSENTERY

Humanitarian organizations and the WHO (World Health Organization) have drawn hundreds of reports on the bacteria that cause diseases such as dysentery and diarrhea that claim millions of deaths, mostly children (1,700 deaths per day).

The main bacteria identified as responsible for the spread of dysentery and diarrhea through the ingestion of contaminated water are:

ESCHERICHIA COLI

The WHO identifies it as the main bacterium responsible with 210 million cases each year, with hundreds of thousands of deaths.

COLIFORM BACTERIA, FECAL BACTERIA, STAPHYLOCOCCUS (MRSA), STREPTOCOCCI, ENTEROCOCCI, MICROCOSSUS, BACILLUS

Bacteria that are contracted by coming into contact with contaminated water by feces both from human and animal; these bacteria cause hundreds of thousands of cases recorded each year; if left them untreated cause the death, especially in children who have a low immune system

PSEUDOMONAS AERUGINOSA – KLEBSIELLA AERUGINOSA - CORYNEBACTERIUM

Another very dangerous bacterium that claims tens of thousands of deaths per year. (Contaminated water ingestion).

SALMONELLA ENTERIDIS – SALMONELLA TYPHIMURIUM – PROTOZOA – ALGAE - FUNGI

LEGIONELLA PNEUMOPHILA – LISTERIA - VIBRIO PARAHAEMOLYTICUS



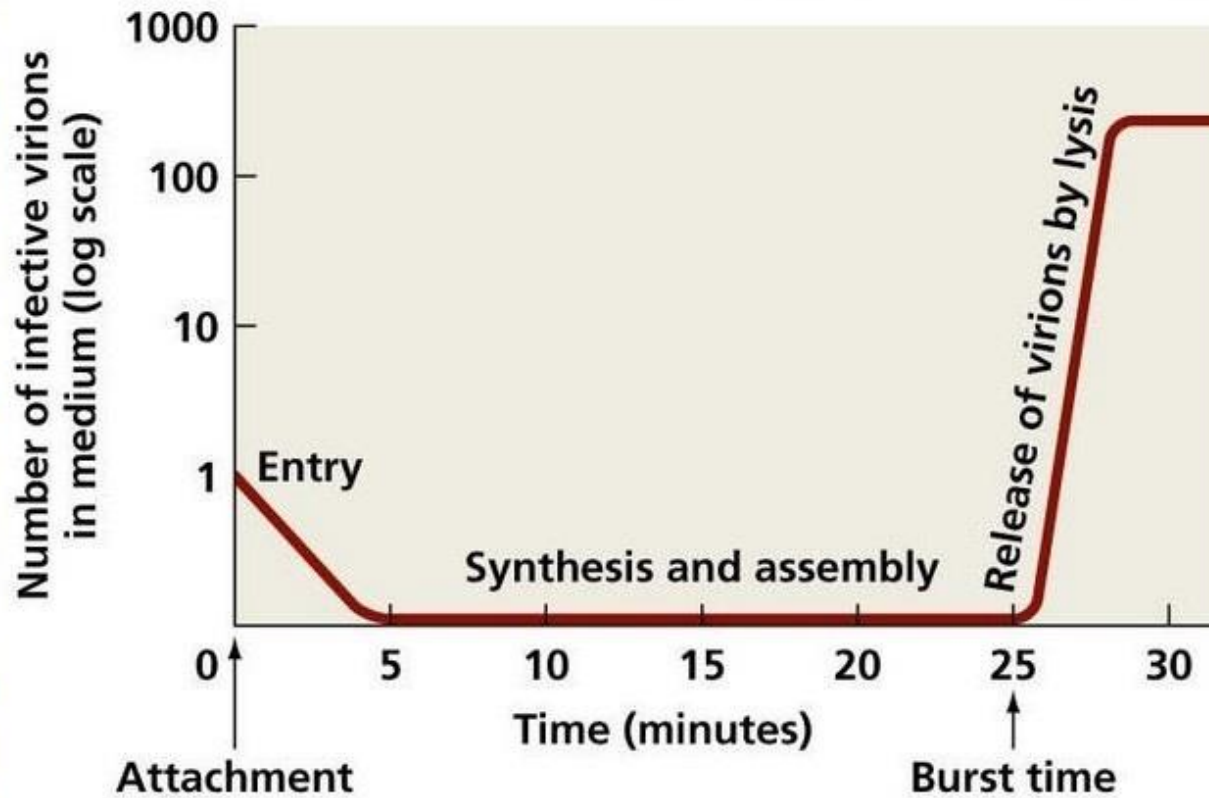
BACTERIAL PROLIFERATION / GROWTH

Bacterial Growth on the surfaces of a dirty and not hygienic normal tank of water

Microorganisms	Growth Temperature	Timing of cell regeneration (each)	What Causes (manily)
Escherichia Coli	37°	20 min	Severe Dysentery, kidney failure, high fever
Salmonella (type E. + T.)	35°- 43°	28 min	Diarrhea, abdominal cramps, fever, sick
Legionella	25°- 45°	4 h	High fever, cephalalg, hard cough, convulsions
Klebisiella A.	44°	35 min	Dysentery, high fever, sick, enteric disorder
Pseudomonas A.	4°- 42°	58 min	Skin, urinary tract, lung infections, fever, nausea
Shighella	7°- 45°	30 min	Severe Bacillary Dysentery, convulsions, fever
Vibrio P.	20°- 45°	29 min	Dysentery, abdominal pains, pain in defecating
Staphylococcus A. (MRSA)	36°	30 min	Diarrhea, sick, abdominal pains, nausea
Enterococcus Faecalis (VRE)	10°- 45°	32 min	Diarrhea, abdominal and lung infections, fever
Bacillus S.	40°	23 min	Dysentery, abdominal colic, gastroenteritis
Streptococcus Faecalis + P.	10°- 45°	37 min	Diarrhea, abdominal and lung infections, fever
Corynebacterium	37°	28 min	Breathing, heart and neurological problems
Microcossus L.	25°-37°	35 min	Bacterial pneumonia, high fever, nausea
Coliform Bacteria	35°- 37°	30 min	Gastro enteric disorders, abdominal cramps
Protozoa, Algae, Fungi	20° - 37	2 h – 30 h	Intestinal infections, cramps, diarrhea, nausea

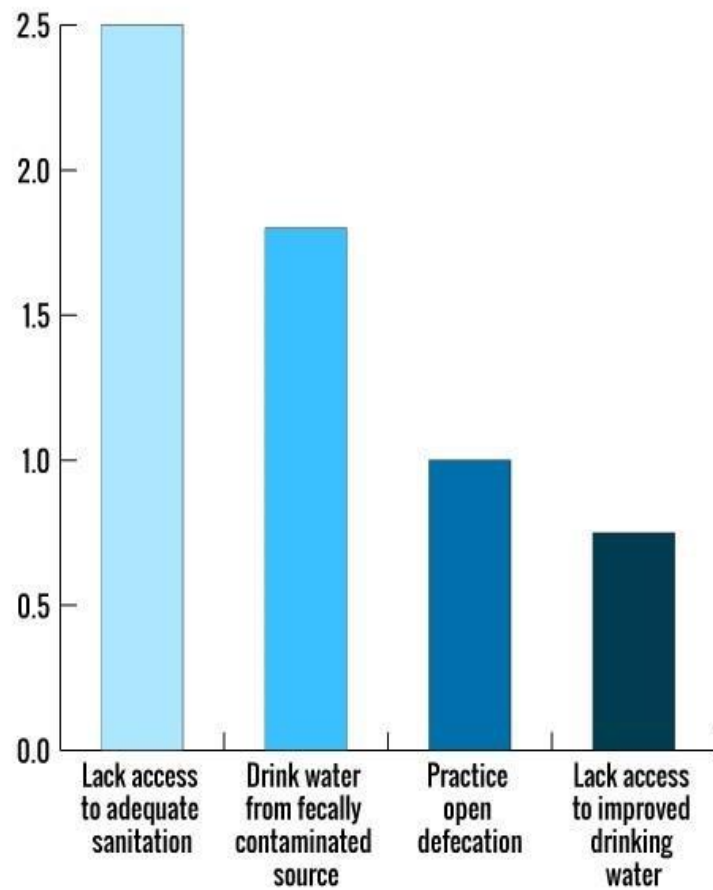


Bacterial Growth

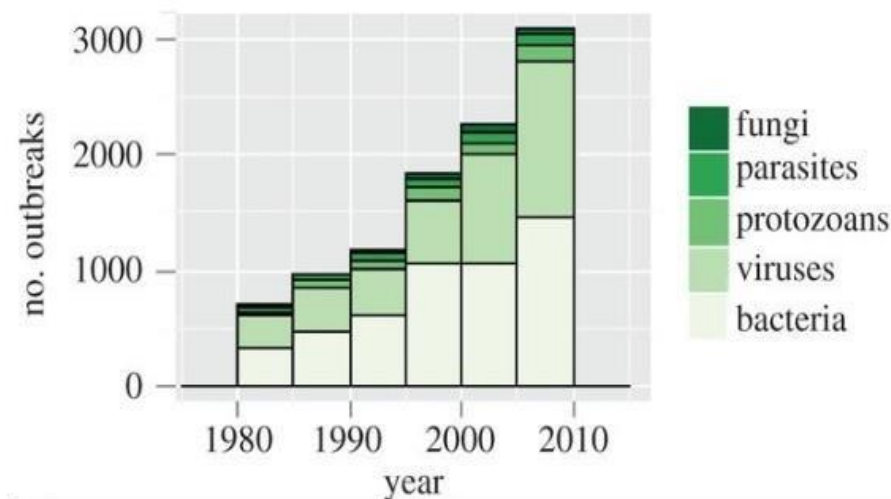


Billions lack safe drinking water

Number in billions of people



Source: United Nations Water Global Analysis and Assessment of Sanitation and Drinking Water, 2014.



THE SOLUTION

By analyzing this very serious problem, we have developed a *unique product* of its kind.

Swisafe@Tank, the first **Antibacterial**, **Antimicrobial** and **Antimicotic** tank in the world.

After years of intense research and extensive studies, we have created a tank to be used for water, capable of *breaking down the proliferation of the main bacteria up to 99%* that cause dysentery, diarrhea, infections and other gastrointestinal diseases.

Escherichia Coli
Enterobacter Aerogenes
Legionella Pneumophila
Pseudomonas Aeruginosa
Salmonella Enteritidis
Salmonella Typhimurium
Klebsiella Aeruginosa
Vibrio Parahaemolyticus
Staphylococcus Aureus (MRSA)
Enterococcus Faecalis (VRE)
Listeria Monocytogenes

Bacillus Subtilis
Streptococcus Faecalis
Streptococcus Pyrogenes
Corynebacterium Xerosis
Micrococcus Luteus
Penicillium Funiculosum
Aspergillus Niger
Fungi
Candida Albicans
Biofilm, Protozoi
Listeria Welshimeri



LABORATORY TEST



Laboratory tests have shown a reduction of proliferation of main bacteria, fungi, protozoa, germs and microorganism up to 99%.



Swisafe©Tank



Swisafe©Tank DETAILS



HOW DOES IT WORK *Swisafe@Tank*

Swisafe@Tank is manufactured using the innovative systems with "**Polymer Antibacterial Mixture**"; **the Antibacterial additive is mixed directly with the base polymer**. As a result:

EACH SINGLE MOLECULE IS ANTIBACTERIAL, ANTIMICROBIAL and ANTIMICOTIC

Its powerful action and effectiveness, *prevents bacteria, germs, fungi, algae and protozoa from growing and contaminate the water, both inside and outside the tank.*

Bacteria and fungi in contact with the surface of *Swisafe@Tank* **are destroyed** with a percentage up to 99%.

Swisafe@Tank is equipped with a special "Safe-Tap" cap, which allows people to drink directly from the container without removing the cap; this ensures better water protection from potential external contamination. The cap is composed of two parts: the yellow one, screwed directly to the tank and the blue one to regulate the flow of water according to liking.

Swisafe@Tank can also be hung vertically thanks to a "loop" (located at the bottom).

Swisafe@Tank has a capacity of 15 liters and takes up very little space thanks to its versatility in being able to be folded.

Swisafe@Tank is produced through a certificated industrial process.



EUROPEAN COMMISSION: ANTIBACTERIAL MIXTURES (POLYMERS)

Recent studies conducted in Behalf of the European Commission show that the *"Innovative Plastic materials, which protect from bacteria and microorganisms"* **are extremely effective and they are in great demand.**

The *"Innovative Plastics' materials are produced"* by mixing a "base polymers (raw material) with Antibacterial and Antimicrobial components.

The result is an "Antibacterial Polymer Mixture". Then It will be used to make the final product.

Each of the plastic molecules manufactured in this way, has Antibacterial, Antimicrobial properties and effectiveness; therefore it is clearly superior to other products that do not use this model.

These innovative "polymer antibacterial mixtures " also have a greater environmental friendliness, as the material is free from chlorine and / or heavy metals.

SWISAFE@TANK IS PRODUCED WITH THIS INNOVATIVE SYSTEM



Swisafe@Tank ACTION:

- DESTROYS THE PROLIFERATION OF BACTERIA (harmful to health) up to 99%
- DESTROYS THE PROLIFERATION OF GERMS and MICROBES up to 99%
- DESTROYS THE PROLIFERATION OF ALGAE, FUNGI and PROTOZOA up to 99%
- KEEPS UNALTERED the PH and the natural water properties (minerals)
- PROTECT WATER maintaining drinkability





Swisafe@Tank was created as a "SUITABLE TOOL" to collect and drink the water.

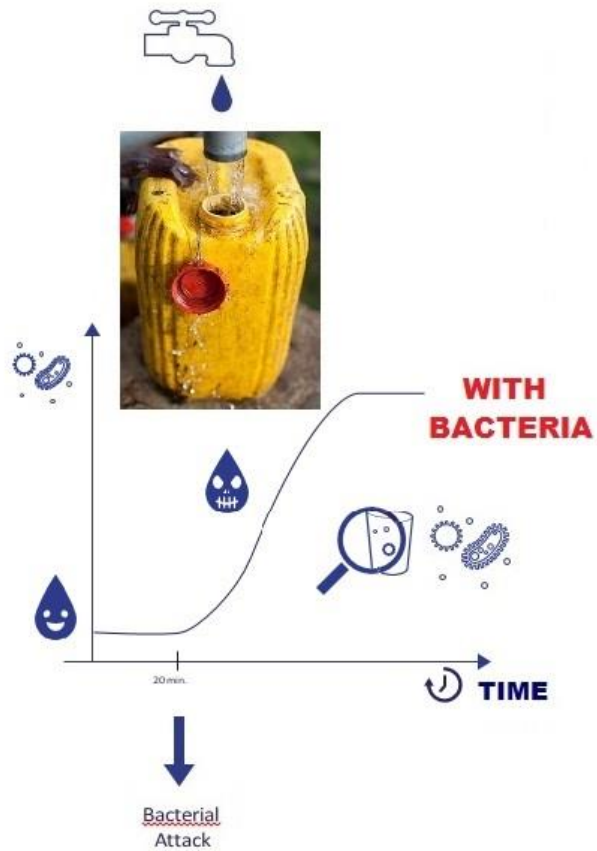


PROBLEM

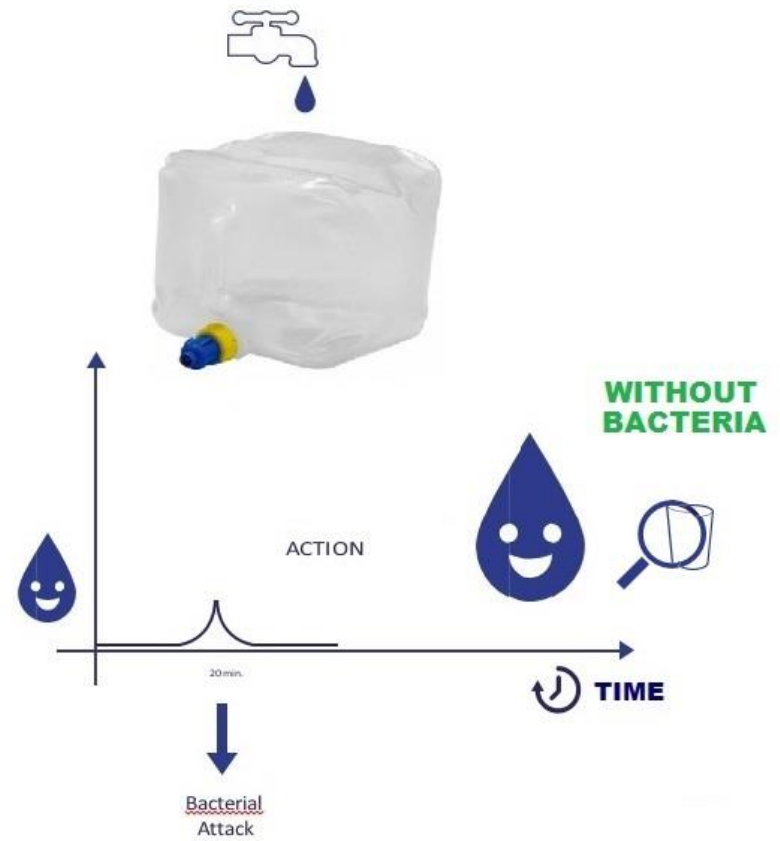


SOLUTION

NORMAL TANK BACTERIAL PROLIFERATION



SWISAFE - TANK ANTI BACTERIAL PROLIFERATION



PROBLEM



NORMAL TANK

BACTERIA

MICROBES

FUNGI

PROTOZOA

ALGAE



AFTER 20 MINUTES
WATER CONTAMINATED
BY BACTERIA



SOLUTION



SWISAFE - TANK



NO BACTERIA

NO MICROBES

NO FUNGI

NO PROTOZOA

NO ALGAE



NO TIME LIMIT TO
BACTERIAL PROLIFERATION



CERTIFICATIONS

Swisafe@Tank is produced with an antibacterial additive (patented) and for this it has received the following certifications:

REGISTRATION STATUS

US FDA: Approved for the use in all types of food-contact polymers.

EFSA The European Food Safety Authority (EFSA) has accepted the active ingredient for use in food contact polymers. In compliance with EU Regulation no. 10/2011.

NSF Certified to standard 51 for food equipment materials.

US EPA Registered and approved for polymers with food contact.

OEKO-TEX Accepted for OEKO-TEX standard 100, classes I-IV.



CERTIFICATES OF CONFORMITY

The whole chain of production is certified according to the standards listed below:

MICROBIOLOGICAL TESTS

JIS Z 2801
ASTM E 21-49
JIS L 1902
ATCC 6538
ATCC 4352
ASTM E2149
AATCC 100
ISO 22196

ATCC 8739
ATCC 6538-P
SAN BIO 33/99
AATCC 30 I
ISO 846 A + B
SAN BIO 12/94
SN 195 920
EN ISO 20645

EN ISO 20743
JIS Z 2801
AATCC 30 II + III
AATCC 147
ASTM E 1428
SN 195 921
ASTM G 21-96

PRODUCTION PROCESS OF “ANTIBACTERIAL MIXTURES POLYMER”

UNI EN ISO 1552-C
UNI EN ISO 3451-1 / 4
UNI 9556
ISO 1133
ISO 868



HEALTH SITUATION

Annually is spent, by associations and humanitarian organizations, hundreds of millions dollars to treat women and children who contract dysentery, diarrhea, gastro-intestinal diseases and infections.

Due to the low immune system, populations in developing Countries, easily get ill; moreover they do not have access to health care services, vaccines or medicines because, in the majority of cases they are far away hundreds of kilometers

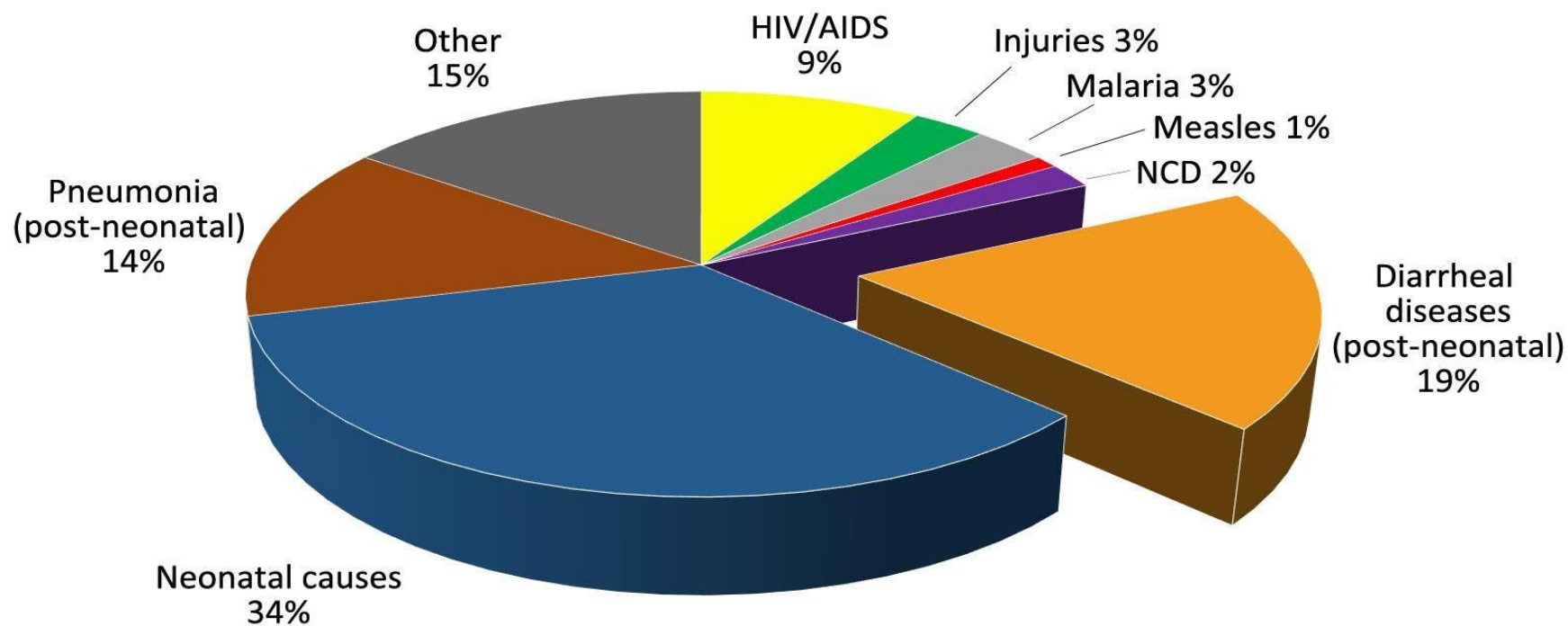
Treatment is expensive (€ 60 for a cholera vaccine; with a chronic disease the availability is not enough).

Mortality caused by dysentery and diarrhea, affect mainly children (1,700 deaths per day) because of the ingestion of water, contaminated with bacteria, such as Escherichia Coli: the virus which can only be killed by antibiotics.

It is difficult to determine whether the contaminated water is collected from "safe water" or not; the fact is that if these populations carry on with the reuse of the "normal" and the occasional containers, for sure they will fall ill.



CAUSE of DEATH (children - neonatal)



1 child in Africa has one chance, 520 greater times of dying of diarrhea than one child born in Europe



Swisafe@Tank: an IMMEDIATE and CONCRETE SOLUTION

Swisafe@Tank is the real and concrete answer, because:

It was designed and built specifically to solve the problem of bacterial proliferation.

It cannot be compared to any other "normal" container, source of harmful bacteria for the human health.

It's the 1st (first) Antibacterial, Antimicrobial and Antimicotic tank for water in the world.

It is the quickest and available solution (ready to use) to give a concrete and an immediate response to millions people who get sick and die every day because of the use of unsuitable containers

It is the answer to the efforts and investments already made (millions USD) for the construction of "safe" water sources; all these investments have been made in order to prevent that the water taken with "normal" container (contaminated), could nullify what has been made up to now.

Replacing the "normal" containers with Swisafe@Tank it would mean, significantly reduce the cases of viral infections, dysentery, diarrhea and other gastrointestinal diseases; moreover, reducing the risks it will have, as a consequence, a reduction of costs for medicines and health care.

Just replacing the "normal" containers with Swisafe@-Tank, the great effects will be visible and tangible in a very short time



Swisafe©Tank as BASIC EQUIPMENT:

Swisafe©Tank can be used in various sector and applications:

HUMANITARIAN SECTOR (mass migration included)

As an Emergency Kit / Basic Kit provided to millions of people by:

- Institutions and Governmental Organizations
- Institutions, Associations, Non-Governmental Organizations
- Foundations
- Private Donations

MILITARY SECTOR – THE ARMED FORCES

As a tactical supply, but especially for Mission abroad in areas where the risk of water contamination is very high.

VOLUNTEER – CIVIL PROTECTION

As a tactical supply, but especially for Mission abroad in areas where the risk of water contamination is very high.



GEOGRAPHIC OVERVIEW (Countries and people who have no access to water)

Hereafter are some of the countries with the highest rate of people who do not have access to the so-called "safe water".

COUNTRY	N° of people
AFRICA	368 millions
CHINA	108 millions (the data tends to rise up to 300 milioni)
EUROPE	159 millions
INDIA	102 millions
BANGLADESH	60 millions
LATIN AMERICA	87 millions
OCEANIA	12 millions



FROM THE WORLD







ETHICS

***Swisafe@Tank* is a "suitable tool" potentially able to reduce some of the "Diseases of Poverty", related to bacterial growth in the water, no matter what source it is collected from.**

Every effort to help these people, small or large, regardless of political convictions and religious beliefs, makes us free and proud.



On our planet the number of people who dies for “unhealthy water” is higher than for any other form of violence, war included. These deaths are an offence to our humanity and undermine the efforts of many countries in achieving their potential development. (Ban Ki-moon – UN General Secretary)





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