



# OPEN ACCESS INTERNATIONAL JOURNAL OF SCIENCE & ENGINEERING

## BIO-WEAPON – A CONTEMPLATIVE DEADLOCK

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**Abstract:** *Weapon, A tool predominantly used for defense, protection, and confliction or maybe contest. But there is not even one unique pragmatic or positive aftermath. That is because at least one fringe or side ends up being deceased, wounded, incapacitated during the events of any kind of unavoidable friction i.e. defense, conflict or protection. But, yes, we can eliminate the contest as a deviation or exception unless it uses a living target. Because living targets always ends up reaching their demise.*

*Weapon is a mechanism for the means of destruction whether it is minute or massive. It is the source code of war. War economy always pays off with all sorts of negative consequences. It started when mankind first understood the concept of righteousness, clan, power, leadership. The first weapon used, was a piece of rock then it advanced to hand club, bow, spear etc. Since then, with the evolution of human mind and introduction of fire, science, minerals, the equipment of destruction has also evolved to a significant level. Now a days we have variety of weapons – small bullets, cutlery to nuclear weapons, which is able to level a massive city just like a finger snap. Many of these weapons are augmented with auto guidance system, laser technology and many other advanced systems.*

*There are many types of weapons-small bullets (7.62mm , 9mm , 12 gauge) , cutlery ,missiles , rockets , mines ,TNT , satchel charge etc. But our most important concern is Bio-Weapon. Bio-Weapon is one significant kind of weapon class. It is equipped with Bio-Agent or Virus or Algae or Fungus. They may be lethal or Non-Lethal.*

*Bio-Weapon is an abomination in human world. The effects are catastrophic and beyond imagination. There is not a single enthusiastic outcome from using Bio-Weapons. Existence of bio weapon must be diminished, because Prevention is always better than cure.*

### I INTRODUCTION

As an introduction the very much possible questions arise in our minds are, I) What is actually a Bio-Weapon? , ii) Why does it even exist? And iii) How much trouble and pain it can cause? Let us discuss these questions one by one.

#### **What is actually a Bio-Weapon?**

Bio-Weapon is one noteworthy invention in weapon class. It does not use orthodox gun powder for its fabrication. But, it does use the fuel for initiating its propulsion from its launch pod or the weapon could be delivered to its rendezvous point with the help of a carrier. Bio-Weapon uses biological agent that attacks its victims to incapacitate or kill.



#### ❖ **Why Bio-Weapon does even exist?**

Bio-Weapons do exist because there are unwise wars, terrorist activities and so called covert operations. Countries around the globe claiming to be super powers are quite busy to prove their worth as a better powerful individual than the other-the war triggered due to this reason is known as Bio war. Another specific reason is terrorist act for which the Bio-Weapons do exist. This activity is known as Bio-Terrorism. A terrorist

organization takes the advantage of acquired Bio-Weapon, uses it as a threat towards humanity or natural balance of a nation. That threat becomes a reality unless in exchange a number of unique demands are fulfilled made by the terrorist organization. Sometimes covert operations, launched domestically or in another soil influenced by false alarm or some misunderstandings, force the use of non-lethal or lethal bio weapons which ends up in unnecessary wounded or even dead bodies.

❖ **What is the aftermath caused by Bio-weapon?**

Any weapon can cause pain and death. In case of Bio-Weapon it takes the torment to another level. Bio Agents or algae or bacteria or fungus are weaponized in the Bio-Weapon shell. They could be lethal or non-lethal. Effects of Bio-Weapon agents are undetectable at first. Slowly the effects begin to be visible through skin, cough, lungs problems or other symptoms. Lethal Bio-Agents directly attacks living cells of any living body and brings it to its demise. On the other side non-lethal Bio-Agents do not kill but incapacitate a living body or partially wound a body.

It does not matter whether the effect is lethal or non-lethal because in any scenario the Bio-Weapons do not bring harmony or peace. They bring only pain and death. They also harm the natural balances, natural resources as well as earth minerals. A nation could be brought to its knees with the help of Bio-Weapons. The harmful effects of Bio-Weapons are beyond any scope of measure.

**II THE TECHNOLOGY BEHIND A BIO-WEAPON:**

Bio-Weapon is an anti-social yet exceptional invention. Biological element i.e. bacteria, fungus, algae, virus etc. could be used to set up these kind of weapon, hence the name Bio-Weapon.

- The origin technology to set up a Bio-Weapon is known as Bio-Technology. Bio-Technology is very cheap compared to other technology used to develop nuclear or chemical weapons.
- The first step is to find and acquire the pathogens or bio-agents which are going to be weaponized. These materials could be found in two methods-either directly from environment or microbiology laboratory. When it is found in environment it remains in raw condition, it should be purified and processed before setting it up to be deployed.
- The agents should be chosen particularly so that the desired result takes place. The effects depend upon the chosen agents.
- Bio-Agents must be multiplied up to a certain amount to create the desired impact. They could be further modified, enhanced for a more severe aftermath.
- Bio-Weapons possess two parts - first one is the bio-agent itself. The agent might be bacteria, fungus, algae or virus.

They might be lethal or non-lethal. This agent is then augmented with the warhead part. After the detonation of the warhead the agent starts to spread across the environment. The detonation could take place with explosion or without explosion. Second part of the weapon is its delivery system i.e. how the bio agents and their effect is going to spread, how much time they will take to spread and how quickly they can spread. There are basically three ways through which the spreading can take place. Air, Water and Food Supply chain-undoubtedly air is the fastest medium to help the spread quickly.

- These days with advanced technology, for example-nanotechnology, mechatronics, biochemistry, genetic enhancement etc. non-lethal bio agents could be turned into lethal agents. These modified agents do more severe damage than the others.
- In the present science is reaching towards the peak level of caliber and its pace is quite fast. Now a days not only missiles, bombs or large warheads are equipped with deadly viruses, small arms ,explosives like hand grenades, TNT, wallmines, landmines, could be rigged with bio materials. It is an achievement but with only negative outcomes.
- A few Examples Of Bio-Agents and diseases caused by them are<sup>1</sup>:

Bio-Agents	Diseases
Bacillus anthracis	<u>Anthrax</u>
Brucella species	<u>Brucellosis</u>
Yersinia pestis	<u>Bubonic or pneumonic plague</u>
Vibrio cholerae	<u>Cholera</u>
Shigella dysenteriae; Some species of <u>Escherichia coli</u>	<u>Dysentery</u>
Coxiella burnetii	Q fever
Francisella tularensis	<u>Tularemia</u>
Rickettsia prowazekii	<u>Typhus</u>
Staphylococcus aureus	Many
Alphaviruses	Many
Filoviridae and Arenaviridae viruses	Many
Variola major	<u>Smallpox</u>
<u>Botulinum</u> (Caused By Toxin Clostridium botulinum)	<u>Botulism</u>
<u>Ricin</u> (Caused by <u>Castor oil plant</u> )	<u>Ricin poisoning</u>

1-Wikipedia-Biological Weapons-Example of Biological Agents (The Page Was Last Changed On 29<sup>th</sup> May, 2019).

### III PREVENTION AND SECURITY MEASURES: -

- We know the saying that “Prevention is better than cure”. For at least a couple of seconds if we think thoroughly and ask ourselves why it is necessary to construct such weapons which actually tend to end up countless lives from the world. If we can stop ourselves from committing unnecessary confliction, follow all the necessary rules, help the nature to keep its balance and prevent all sorts of terrorist activities, it is actually possible that there won't be any need of such kind of weapons.
- But, still if the unavoidable confliction and antisocial activities rages on, we have to be prepared for all sorts of security measures possible. But a thorough process should be followed-
  - **Coordinating Responders requires<sup>2</sup>**
    - I. Dedicated physical space
    - II. Various tools to ensure optimal organizations of meeting.
    - III. A joint plan of action regularly as situation evolves.
    - IV. Tools to ensure communication between various stake holders.
  - **Health Information<sup>3</sup>**
    - I. Surveillance of the disease.
    - II. Information on the interventions.

Surveillance basically provides information on the number of cases and deaths by period and plan.

- **Community Risk<sup>4</sup>**
  - I. Outbreaks investigation.
  - II. Action for mitigation and control.
- **Health Interventions<sup>5</sup>**
  - I. Transmission.
  - II. Severe morbidity and mortality.
  - III. The impact on health system and also political and other sections.
- **Community engagement during epidemics<sup>6</sup>**
  - I Establishing a dialogue between responders and communities.
  - II. Building trust through mutual understanding.
  - III. Empowering communities, providing them with necessary medical and other supplies.
  - IV Seeking and providing health care as advised.
  - V Re-integrating of survivors into the community and minimize the stigma.
  - VI Detecting an outbreak and detection of newly infected people.
- **Risk communication<sup>7</sup>**
  - I. Build trust
  - II. Communicate uncertainty pro-actively.
  - III. Engage communities.

- IV. Message well.
- V. Establish and use listening and feedback system.
- VI. Use social media appropriately.
- VII. Risk communication operators require resources.
- VIII. Treating emergency risk communication as a strategy roll not add on.
- IX. Establish coordination and information system.
- X. Building capacity for next emergency.
- **Treating patients with solicitude<sup>8</sup>**
  - I. With the help of advanced medical science and chemical technology many infectious diseases could be prevented and treated.
  - II. Development of several vaccines particularly for infants and young children has given global protection a number of childhood killing diseases.
  - III. There also have been great development in field of diagnostic and treatments such as monoclonal antibodies, but the price is extremely high as they are not available for mass administration.
  - IV. Whether the focus is on antibiotics, special treatment or medicines, the pivotal fact is –they are only beneficial when administered by skilled, qualified and dedicated health personals.
- **Protecting frontline responders<sup>9</sup>**
  - I. During an epidemic with little or no warning health workforce i.e. doctors, nurse, health workers are transformed into frontline workers, thrusting into immediate contact with the infected.
  - II. Thus it is essential to protect them from infection-both for their own safety and wider protection for affected Community. So, urgent provision of practical safeguard, necessary personal protective equipment is essential.
- **Confronting human and medical resources crisis<sup>10</sup>**
  - I. The role of medical workforce and medicines are often shackled by one common problem-lack of resource. It is a global problem. Protecting occupational health of health workers and producing medicines with more than enough quantity is vital.
  - II. It is not just a matter of number of health workers. The focus must be on how many there are against how many needed.
  - III. If it is accepted that health begins with health workers-doctors, nurse then their protection and empowerment is also necessary. Same theory goes for medicine and medical equipment. This applies to the context of Epidemic disease control as much as it does to other health issues more widely.
  - IV. Engagement of communities during epidemics including health workforce community need to be at the heart of epidemic response.

#### IV CONCLUSION

From the above discussion we could say without any effort that prevention is the best option we have, because if there is no Bio-Weapon, then there is no Biological warfare, no outbreaks and no deaths. But, when bio-weapons do exist, we would see each day full of pain, death and remorse. The security measures and curing process are also time consuming. How much we advance ourselves, the existence of bio-weapon is grotesque and incomprehensible. Recently we saw the horror of COVID-19 outbreak. Common people are facing death-row every day. This is not a drill, this is the question of human survival. For our sake and for the sake of our loved ones we must convince ourselves to prevent such abomination like Bio-weapons, this is the right thing to do.

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