U.S. Use of Toxic Materials in Warfare and International Law:
A Case Study of "Agent Orange" Product Liability Litigation

Yuriko Moto

米国による有毒物質の戦時使用と国際法
― ベトナムの枯葉剤被害者による損害賠償請求事件を事例とする考察 ―

元　　百合子

Abstract

Four million Vietnamese were exposed to toxic chemicals sprayed by the U.S. military and Saigon government in their defoliation and crop destruction campaign for 14 years from 1961 to 1975 in southern and central Vietnam. A million Vietnamese, including children, are still suffering from serious health hazards including congenital deformities allegedly caused by the "herbicides" that contained dioxin, the strongest man-made poison ever known. While the U.S. government and the manufacturer companies have paid compensation and benefits to the U.S. veterans who complained about similar symptoms, they have persistently denied their moral and legal responsibilities for Vietnamese people's ordeal. This essay examines the legal implications of a lawsuit, filed by the Vietnamese victims in 2004 in a U.S. court against the manufacturers, on the international restrictions on newly developed, but not yet expressly forbidden, instruments of combat. The case was dismissed by the court last year.

Key words : herbicide, dioxin, poison, chemical weapons, liability under international law
(Received September 29, 2006)

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ベトナム戦争中の10年間に米軍が大量撒布した、猛毒のダイオキシンを含む枯葉剤には約400万人が被曝した。戦後30年を経た今もベトナムでは、子どもを含む100万人が奇形や脳障害といった重度の先天性異常や種々の疾病に苦しんでいる。同様の健康被害を訴えた自国の退役軍人には、米国政府と枯葉剤製造会社から補償や手当てが支給されてきたが、ベトナムの人々に対しては両者とも一貫して道義的、法的責任を否定してきた。小論は、ベトナムの被害者による損害賠償請求事件を事例として、条約上の明示的禁止を欠く新型兵器や化学物質等の使用規制、その製造・使用の処罰と被害者救済といった、国際社会が現在直面する課題を考察する。

キーワード：枯葉剤、ダイオキシン、毒、化学兵器、国際法上の責任
(2006年９月29日　受理)

1. Introduction[1]

The Vietnam War is not history. Over 30 years have elapsed since the Vietnam War ended in 1975. Yet, at least a million Vietnamese are still suffering from devastating effects of the toxic chemicals used by the U.S. military and its ally, Saigon regime during the war.[2] It is the consequence of what Vietnamese people perceive as the largest and longest campaign of "chemical warfare" that mankind has ever experienced. "Agent Orange", named after the color of its container, and similar chemicals were sprayed in massive quantities mostly in the southern part of Vietnam as defoliants to deprive "communist Vietnamese forces" of forest cover and crops to live on. More than 3 million hectares of land were subjected to spraying that exposed 3 to 5 million people, half of them civilians, to the herbicides.[3] Dioxin, an extremely toxic agent was contained in Agent Orange that is believed to have caused a variety of health hazards to countless people including birth-defects to their off-spring. The U.S. has never admitted its moral or legal responsibility.

In 2004, Vietnamese nationals filed a complaint in a U.S. Court against the firms that manufactured the herbicides for deaths and a multitude of serious health problems resulting from its use by the U.S. military and its allied troops during the war. The plaintiffs alleged that the chemical companies produced and supplied toxic chemicals containing dioxin for the military use in Vietnam, the potential of which for harm to humans was both known and readily preventable. They contended that such acts constituted violations of laws and customs of war, known as war crimes, and they were therefore liable for the consequences under both U.S. and international law. A year later, as the defendant-companies hoped, the court dismissed the complaint on its face, by holding that the alleged acts of chemical companies were lawful under any relevant law. According to the ruling, Agent Orange, even if laden with dioxin, was a "herbicide", which does not fall under the category of "poison or poisoned weapon" prohibited under international law.[4] The plaintiffs, being "sadly disappointed", soon filed an appeal to the U.S. Court of Appeals for the Second Circuit. Parties to the lawsuit have submitted their briefs to the court. To date (29 September 2006), the result of the appeal has not yet been given.

This essay is an attempt to examine and assess the main points of dispute in this lawsuit in light of international law without going into details due to the space constraints. The legality of the chemical companies'acts, especially whether they constitute war crimes, and their liability for the damages allegedly caused by their products, depend mainly upon (a) whether Agent Orange was a poison or poisoned weapon, of which use was prohibited by international law at the time of its use; and (b) whether private suppliers whose products, when used for military purposes, have effects contrary to international law can be held liable. The significance of the Vietnamese people's legal action, in this context, is

not limited to the indemnity for the plaintiffs. It poses important questions that have not been fully addressed or answered, such as the applicability of international restrictions on weapons to newly developed instruments of combat, and the liability of private companies and individuals for their engagement or involvement in war crimes as state's contractors.

(a) is connected to the issue of newly developed weapons, or those in the process of development, legality of which use is highly questionable, such as Depleted Uranium (DU) weapons and small nuclear bombs. DU munitions, the radioactive weaponry have actually been used extensively in recent wars and military operations in Iraq and Afghanistan by the U.S. and in the Balkans by the NATO forces. DU is strongly suspected to have caused long-term adverse effect on people exposed to it in those contaminated areas. (b) is related to the other ongoing phenomenon. An increasing number of private companies have been contracted by the U.S. and its allies to perform military operations in combat zones. Those "civilians" appear to enjoy impunity for their actions unacceptable under international law, such as torture and indiscriminate killing of citizens. Regrettably, the international community has not been successful in enforcing international humanitarian law, or in setting new standards to address these phenomena.

In this paper, I will first try to present an overview of the facts relating to the U.S. defoliation and crop-destruction campaign, its alleged consequences and the predominant scientific views on the toxicity of dioxin and the causal link between dioxin and illnesses and birth-defects. It includes the U.S. government's official statement on the causation and benefits provided to Vietnam War veterans, and the compensation paid by the chemical companies to settle their complaints regarding the adverse effects of Agent Orange. Then, the gist of the arguments of the parties of the litigation will be presented along with the court decision on the points of dispute. Subsequently, the opinion of the presiding judge will be critically examined in light of the facts and relevant international legal instruments. A decision made by a Korean court on a similar complaint brought by Korean veterans of the Vietnam War on the health ailments allegedly caused by Agent Orange will briefly be introduced. International law restricting the means of combat destructive to the environment and ecosystem will not be examined in this paper, since the standard setting endeavors were initiated by the international community after the Vietnam War, actually inspired by the U.S. defoliant operation and its acid rain campaign.

In conclusion, I would argue that the same standard relating to the causation and compensation applied by the U.S. government and the chemical companies for the U.S. veterans should be applied to the Vietnamese people. With regard to the legal issues referred to above, I would propose that a broader interpretation of the treaty provisions related to prohibition of harmful weapons should be applied rather than the restrictive interpretation taken by the U.S. government and the judge.[5] Given the rapid progress of

scientific studies and technologies utilized in developing new weaponry including chemical substances, the international treaties in the area of rules of war would, otherwise, constantly expand its loopholes and rapidly become meaningless. All the belligerents and their contractors should observe the principles of international humanitarian law, respect the spirit and objectives of the treaties and conduct themselves accordingly, rather than try to exploit loopholes by relying on technicalities.

２．Use of Toxic Chemicals in the Vietnam War

According to the U.S. government records, the U.S. sprayed 19.4 million total gallons (more than 72 million liters) of herbicides between 10 August 1961 and 31 October 1971. It amounts to an average of 5,193 gallons per day for 3,735 days. The herbicides were sprayed mostly by airplanes, but helicopters, navy riverboats, trucks and backpack sprayers were also used. Agent Orange containing relatively high levels of an exceedingly poisonous contaminant known as “dioxin” or “TCDD” accounted for over 60% of the total herbicides sprayed over Vietnam (11.7 million gallons that equals to 44 million liters).[6] Consequently, 366 kilograms of dioxin were sprayed over southern and central part of Vietnam.[7] Other herbicides such as Agent Green and Agent White also contained toxic substances.[8]

The U.S. spraying campaign aimed at improving its ability to detect enemy base camps and enemy forces along lines of communication and infiltration routes by stripping trees bare and also depriving the enemy of food. The overall herbicide spraying program was part of the warfare. Instead of laboriously clearing roadside vegetation by hand as the French Foreign Legion did more than a decade earlier, the U.S. forces used much more ‘sophisticated’ means － chemical herbicides.[9]

There has not been any dispute between the U.S. and Vietnamese governments over (1) the fact that Agent Orange and other chemicals were used as an instrument of war, (2) the quantity sprayed, and (3) that Agent Orange contained dioxin. Dioxin is one of the most virulent agents that mankind has ever known. Its toxicity is much stronger than Yperit, Sarin or Tabunm. The lethal dose of dioxin for a monkey is 70 ppb, while that of Sarin is 83 ppb and 208 ppb in the case of Tabunm.[10] One nanogram (1/a billion gram) of dioxin can cause cancer, various deformities and other birth-defects in off-spring. Several dose of nanograms can kill a human being.[11]

Not only those who were sprayed at but also those who sprayed, namely the military personnel of the U.S. and its allies such as South Korea, Australia, New Zealand as well as the Saigon regime have been contaminated. Consequently, the Vietnam War veterans of the U.S. and other countries and their children in some cases, claimed they have been suffering from serious health problems caused by their exposure to the herbicides.

With regard to the toxicity of dioxin, the U.S. Department of Veterans Affairs indicates

in its "VA's Guide on Agent Orange Claims" that dioxin *had been found* [before some veterans expressed concern in the 1970's that exposure to Agent Orange might cause delayed health problems] to cause a variety of illnesses in laboratory animals. It adds that "more recent studies have suggested that dioxin may be related to several types of cancer and other disorders."[12] The periodical reports of the Institute of Medicine (IOM) of the U.S. National Academy of Sciences have reaffirmed that "there is some evidence to link certain term health problems with exposures to the defoliants and their various components."[13] Its 2003 report based on a reassessment of six studies of herbicide exposure, for instance, concluded there were "enough data to support an association of exposure to these chemicals and the development of chronic lymphocytic leukemia (CLL), a form of cancer of the blood.[14]

It is a scientifically proven fact that dioxin persists in human bodies and the environment for long time. Scientific findings show that the half-life cycle (time required for 50% reduction) of dioxin in soil is 9–25 years at the surface layer and 25–100 years at deeper layers. The half-life cycle of dioxin in human bodies is controversial. Generally it is considered to be 5–7 years, but Dr. Arnold Schecter, a leading expert in the U.S. in dioxin contamination, who carried out an extensive research on the persistence of dioxin, has argued that dioxin in the blood of persons may be found after 35 years of contamination.[15] In 1995 researchers found that during the spraying of Agent Orange in southern Vietnam, dioxin levels in human tissue were as much as 900 times higher than those living in the north where Agent Orange was not sprayed. Dioxin levels in the south in1995 were still 50 times higher than those in the north. These findings suggest that people in southern Vietnam may have been at a greater risk of developing cancers, adverse reproductive and developmental effects, immune deficiency, and other health ailments due to their exposure to Agent Orange.[16] In 2003 Dr. Schecter sampled the soil in the vicinity of former U.S. military bases where Agent Orange was stored in large quantities, and found it contained TCCD levels that were 180 million times above the safe level set by the U.S. Environmental Protection Agency.[17] It took years or even decades for the forests to recover from the effect. Some areas have not completely recovered yet.[18] More than 36 million people live in the sprayed areas today.

The exact number of individuals who were subjected to direct sprayings is not clear, let alone those indirectly exposed through contaminated water, soil and food. A group of U.S. scientists from the University of Columbia that carried out a research estimated 2 to 4 million people were exposed to the herbicides.[19] A number of Vietnamese directly exposed to, covered by and inhaled the herbicide mist have already died.

The contamination of the food chain is strongly suspected to have caused a proliferation of birth defects and other health problems.[20] Women have suffered

reproductive disorders or complications during pregnancy.[21] The rate of miscarriages and birth-defects of babies increased dramatically during and after the war. Virulent forms and severity of birth defects are those unthinkable at normal times. Babies have been born with twisted feet, hands or limbs, or even twisted torso, missing eyes, arms, internal organs or part of brain, and intellectual impairment. Many of them suffer from combined defects.[22] Those born prematurely or with serious defects or illnesses did not survive.[23] Many children suffer with neurological diseases and infliction with chloracne. According to Vietnamese Red Cross records, there are 150,000 children, whose birth defects can be readily traced back to their parents' exposure to Agent Orange during the war, or the consumption of dioxin-contaminated food and water since 1975.[24] The rate of birth-defects has been so incredibly high that in certain cases, most or all children born to a family had birth-defects.[25]

Most of the victims and their families are among the poorest in Vietnamese society. In addition to the physical pains and agony, many of them have been suffering from financial hardship. Life is extremely difficult for families with two or more deformed or disabled children. Subsidies have been provided to a certain number of victims — not all of them who identify themselves as victims — recognized by the government since 2002. The amount of the subsidy, however, is less than $10 dollars a month and far from enough even to cover basic medical expenses, let alone living expenses. The majority of the victims are left without access to medical treatment and rehabilitation.[26]

The US military ceased spraying Agent Orange in 1971, obviously as a consequence of growing criticism in the U.S. and international community. Most notably, 5,000 scientists in the U.S. including 17 Noble Prize laureates and 129 members of the U.S. National Academy signed a petition in 1967 that urged the Johnson administration to immediately stop using toxic herbicides in Vietnam.[27] A citizens' tribunal organized in the same year by Bertrand Russell and other prominent intellectuals condemned the U.S. war-crimes in Vietnam including the use of weapons prohibited by the laws of war. In 1969 the United Nations General Assembly passed a resolution condemning as contrary to international law the use in international armed conflict of all chemical and biological agents. The U.S. government, however, let the Saigon regime continue the spraying operations until 1975.

Ever since the end of the war, as mentioned earlier, Washington has refused to accept any moral or legal responsibility for the alleged toxic legacy. The Peace Agreement concluded in Paris by the U.S. and Vietnamese governments in 1973 did not address the issue. Hanoi at that time was not fully aware of the severity and the scale of the prolonged damages on its people in the subsequent decades. Once the U.S. economic sanctions were lifted and diplomatic channels were resumed in 1994, it repeatedly sought a humanitarian solution from the U.S. by asking Washington to "acknowledge its responsibility to de-mine,

detoxify former military bases and provide assistance to AO victims". But Washington, whether it was the Clinton or the Bush administration, has acknowledged nothing more than the need of further scientific research. The unresolved legacy and U.S. denials of responsibility impelled Vietnamese victims to take unprecedented legal action.

3. "Agent Orange" Product Liability Litigation — an Overview

On 30 January 2004 at the U.S. District Court for the Eastern District of New York, Vietnamese nationals and an organization, the Vietnam Association for Victims of Agent Orange/Dioxin ("VAVA"), representing 4million victims including the deceased, sued chemical companies for, in essence, committing violations of domestic and international law by manufacturing and supplying toxic defoliants to the governments of the U.S. and South Vietnam, which were sprayed, stored and spilled in Vietnam from 1961 to 1975. They claimed damages caused by exposure to the chemicals and sought environmental abatement, clean-up of contaminated areas and disgorgement of profits. The defendants are 37 chemical companies including well-known large corporations such as Dow Chemical, Monsanto, Hercules, Occidental Chemical, Ultramar Diamond Shamrock, Maxus Energy, Uniroyal Inc and Wyeth. (*"Agent Orange" product Liability Litigation; The Vietnam Association for Victims of Agent Orange/Dioxin et al. v. Dow Chemical et al*., 373 F. Supp. 2 d7, E.D.N.Y. 2005) The plaintiffs also petitioned for a "declaratory remedy" by denouncing the defendants' acts as war crimes. The suit could have resulted in billions of dollars in damages to compensate alleged victims and repair environmental damage caused by the chemicals.

The Court presided over by Senior Judge Jack B. Weinstein recognized the admissibility of the plaintiffs' complaint on the basis of the Alien Tort Statute, 28 U.S.C. § 1350 that entitles nationals of other countries to bring a complaint in a U.S. court over a violation of international law. However, on 28 March 2005, the Court dismissed all the claims made by the plaintiffs. Judge Weinstein, in his 233-page memorandum attached to the ruling, concluded that there was no basis for any of the claims of plaintiffs under the domestic law of any nation or state or under any form of international law.[28]

Alleged acts of the defendant companies may be summarized as follows:

(i) They were aware of the toxicity of dioxin-laced substances and its damaging effect on human health years before they started to supply Agent Orange (AO) containing dioxin to the U.S. forces, as supported by the evidence.[29] The dioxin contamination level of Agent Orange was much higher than the herbicides normally used domestically in the U.S. for agricultural purpose. Yet, in pursuit of profit, they kept

producing and supplying AO and other toxic chemicals for over 10 years, knowing the chemicals would be and were actually used extensively for military purposes, in fact as a means of combat in contravention of international law.

(ii) They neglected removing or even reducing dioxin, which they could have done had they followed then-existing standards in the industry, and let the US military spray it in a massive quantity over the crops, land and people of Vietnam, knowing it would cause serious and sometimes fatal health risks to humans and the environment. While their knowledge of the AO's toxicity was greater than that of the U.S. government, they neglected sharing the knowledge with the government.

The plaintiffs contended that these acts constitute war crimes prohibited by the principles of customary international law and international documents such as the Annex to the 1907 Hague Convention IV, Respecting the Laws and Customs of War on Land (hereafter, the 1907 Hague Convention IV); the 1925 Geneva Protocol for the Prohibition of the Use of War in Asphyxiating Poisonous or Other Gases, and of Bacteriological Methods of Warfare (1925 Geneva Gas Protocol); 1949 Geneva Convention Relative to Protection of Civilian Persons in Time of War; 1945 Agreement for the Prosecution and Punishment of Major War Criminals of the European Axis and Charter of the International Military Tribunal at Nuremberg, in addition to some U.S. laws.[30] Judge Weinstein disagreed. Further analysis of the legal disputes follows in subsequent section of this paper.

The defense focused primarily on the following two points:

(i) The US government was responsible for how their products were used, not the manufacturers. They produced Agent Orange according to U.S. government specifications, and maintained that U.S. courts could not punish corporations for carrying out the orders of a president exercising his powers as commander-in-chief.

(ii) There has not been a proven connection between Agent Orange and health problems it is accused of causing.

On the contractor defense, Judge Weinstein admitted that corporations could not be exonerated from civil legal actions under international law. He nevertheless concluded that the manufacturers could not be held liable in this case because "the heart of the plaintiffs' claims was based upon the [U.S.] government's decision to procure the products at issue, in addition to the military decisions regarding the precise nature of their use." While he acknowledged that defendants knew how herbicides would be used and that the chemicals were actually sprayed extensively and sometimes excessively, he rejected the plaintiffs' claim to hold the defendants liable for a disproportionate use of the herbicides

for military purposes, for the same reason.[31]

The judge ruled in favor of the defendants on the causation, as well. He argued that the plaintiffs failed to prove the causal relationship between dioxin and the illnesses since their claims were anecdotal, not backed by substantial epidemiological and other scientific data.[32] In his view, even the studies carried out by the U.S. National Academy of Science that supported the Veterans Administration decisions to declare 23 diseases "presumptively caused" by Agent Orange as a basis for disability payments "are of almost no use in determining causation for litigation purposes".[33]

It is known that the US Justice Department had urged the judge to dismiss the lawsuit. In a brief filed in January 2005, the Justice Department said opening the courts to cases brought by former enemies would be a dangerous threat to presidential powers to wage war.[34]

While a spokesman for Dow Chemical Company commended Weinstein's decision,[35] the plaintiffs and their supporters felt the ruling was "extremely irrational and unfair based on an impractical and unscientific argument".[36]

4. International Law Arguments

Among the international instruments upon which the plaintiffs based their claims, most relevant in determining whether the defendants' acts constituted war crimes are Article 23 of the Regulations Respecting the Laws and Customs of War on Land, the Annex to the 1907 Hague Convention IV, and the 1925 Geneva Gas Protocol.

The employment of "poison or poisoned weapons" and "the use in war of asphyxiating, poisonous or other gasses, and of all analogous liquids, material or devices" are forbidden respectively by Article 23 (a) of the 1907 Hague Convention IV and 1925 Geneva Gas Protocol. "Poison or poisoned weapons" is not defined in the 1907 Hague Convention IV, though. In rejecting the plaintiffs' war-crime appeal, Judge Weinstein stated that the "imprecise scope of the Hague Convention IV's prohibition on the use of 'poison or poisoned weapons' and the uncertainty as to whether that prohibition even applies to lethal chemical weapons designed to kill human beings, is fatal to any claim that the [Hague] Convention [IV] sets forth a sufficiently definite prohibition on military use of herbicides that could be enforced in United States courts."[37] This view accords the U.S. government's interpretation of the Convention.

The applicability of the 1925 Geneva Gas Protocol to this litigation was disputed by the parties because the U.S. was not a party to the treaty until 1975. The plaintiffs argued the Protocol had the status of customary international law that was universally applicable regardless of ratification. In contrast, the defendants as well as the U.S. government maintained that the Protocol was not binding upon the United States at the time of the

Vietnam War, and no rule of international law barred the use of chemical herbicides in the war either to clear bush and leaves or to destroy crops intended to feed enemy forces. Judge Weinstein stated that "the proscription — whether based on the protocol or the customary international law — did not prohibit military use of herbicides at the time of the Vietnam War". In his view, the norm could not apply to herbicides even if poisonous because, unlike the mustard gas used in the World War I, Agent Orange did not have "an almost immediate disabling effect" on human beings.[38]

Judge Weinstein admitted that dioxin itself was a poison. Yet he characterized Agent Orange and other chemicals sprayed in Vietnam as mere "herbicides" and not "poison". He did not find the contamination level high enough to cause significant harm to humans. This was strongly criticized by the plaintiffs as unscientific and unfair. Unfair, because the ruling on causation was made without giving plaintiffs an opportunity to present the numerous modern studies and expert views linking dioxin with many diseases and conditions.[39] The other reason for such a characterization is that those chemicals were designed and produced as "herbicides" and the harm on humans were "secondary" or "collateral". Despite his knowledge of the fact that the U.S. Department of Defense developed "herbicides as a military weapon", being inspired by the British use of 2, 4, 5-T (acid) laden with dioxin to destroy jungle-grown crops during the insurgency in Malaya, he stresses the absence of intention "to inflict poisoning as a means of combat" in designing the herbicides prevents their characterization as poison.[40] The same logic was applied to the prohibition of employing "arms, projectiles, or material calculated to cause unnecessary suffering", stipulated in Article 23 (e) of the 1907 Hague Convention IV.[41] In his view, the toxic herbicides were not "calculated" to cause unnecessary suffering, even if the poison resulted from a known, preventable manufacturing defect.

Different interpretations exist as to what the undefined phrase "poison or poisoned weapons" means. However, such a restrictive interpretation contradicts the United Nations General Assembly Resolution 2603 (XXIV) A of 1969 adopted in the midst of the Vietnam War. The Resolution acknowledged that the 1925 Geneva Gas Protocol represents a widely accepted international rule which, regardless of technological development, prohibits the use of all chemical means of combat in international armed conflict. The Resolution is an expression of the objection of the majority of the United Nations member states against the narrow interpretation adopted by the U.S. and some other countries.[42]

As seen above, intent and immediate harm are determinant factors in Weinstein's judgment on the legality of manufacturing, supplying and using toxic agents in war. Should this theory be applied to DU weapons or even small nuclear weapons that are currently developed by the U.S., the manufacturers and the users would enjoy impunity no matter how pernicious the "collateral" damage on humans and the environment would be. For

instance, DU munitions are designed to destroy tanks and kill or injure enemy troops in them, and perhaps not "intentionally designed" to contaminate air, water and soil over a large area and harm non-combatants almost indefinitely. Furthermore, they do not have immediate disabling effect but delayed long-term effect on humans, except for the combatants in the tanks who instantly get burnt to death.

Additionally, the indiscriminate nature of the defoliation and crop destruction campaign using toxic chemicals, with foreknowledge that it would harm non-combatants, should also be questioned. 1949 Geneva Convention Relative to Protection of Civilian Persons in Time of War prohibits attacks on non-combatants. Even if the campaign is not regarded as a war crime of indiscriminate attack on civilians, a question of the violation of basic human rights remains, such as the right to life, the right to security, and the right to a standard of living adequate for the health and well-being of himself and of his family. The former president of the Vietnamese Red Cross, denounced the U.S. action as "a massive violation of human rights of the civilian population".[43] Moreover, spraying toxic chemicals on someone's body, house or crops is a tort in the eyes of most country's law.

5. Korean Court's Decision

About 320,000 South Korean troops fought alongside U.S. soldiers in the Vietnam War, the largest outside contribution to the U.S. war effort. Out of more than 131,000 Korean veterans who claim they have suffered from illnesses associated with Agent Orange, the South Korean government officially recognizes 92,320 as victims of Agent Orange. Many of them feel their life has been ruined, and eke out scanty livelihoods with between US$ 300 and US$ 550 in monthly subsidies.[44]

In a lawsuit filed originally in 1999 as two separate litigations by more than 20,000 South Korean veterans, the Seoul High Court, in January 2006, ordered Dow Chemical and Monsanto to pay medical compensation to 6,795 veterans, of between $6,480 to $47,400. The total amount will be US$ 62 million. In its ruling, which overturned two lower court decisions, the High Court ruled that the chemical companies were liable for the injuries inflicted on those exposed to Agent Orange. The court held the companies made the herbicides without regard to the standard, even though they were able to reduce the concentration of dioxin (TCDD) to under 0.05ppm. They were found negligent in manufacturing defoliants with an excessive dioxin content and responsible for the consequences of the product defect.[45]

The chemical companies defending the case relied on the same logic that they used at the U.S. court. The government contractor defense was not found applicable in the case, mainly because U.S. sovereignty does not encompass victims in South Korea. On the second point, the court held that the only way to prove the causal link between the

chemicals and the diseases was “through the statistical, correlational methods”. The Korean judges cited a report from the U.S. National Academy of Science, which recognized a “causal relationship” between AO and 11 diseases such as lung, prostate and larynx cancer. They dismissed the plaintiffs’ claim on peripheral neuropathy.[46]

Given the court decision, Dow and Monsanto continued to deny culpability. Since neither of them has listed property in Korea, it will be practically impossible for the Korean authorities to enforce the ruling if the companies refuse to abide by it.

The U.S. forces, during the period 1968 to 1969, sprayed 220 thousand liters (59,000 gallons) of Agent Orange and two other types of herbicides over 21,000 acres of land on the southern side of the Demilitarized Zone by mobilizing South Korean troops.[47] South Korea lists 1,400 veterans as having been exposed to chemical when they served along the border with communist North Korea in 1968–69. The U.S. military proposed using the defoliant to thwart possible infiltration by North Korean agents.[48] On the ground of the prior consent given by the government of the Republic of Korea, although detailed information on the herbicides were not provided, the U.S. government has kept denying its legal responsibility for paying compensation.[49]

6. Compensation for the U.S. Veterans

Under the Agent Orange Act of 1991, around 10,000 U.S. Vietnam War veterans who were exposed to Agent Orange receive disability benefits for various types of cancer and other serious health problems that have been linked to dioxin.[50] The number of diseases recognized to be associated with Agent Orange has increased after the enactment of the law. The Under Secretary for Health of the Department of Veterans Affairs under the Clinton Administration, which expanded the benefit by increasing recognized diseases, acknowledged that one body scientific evidence “establishes a clear cause-and-effect relationship” between Agent Orange and the various ailments. He added that the law deliberately weighted the doubt in favor of veterans, requiring only that evidence of a “statistical association” be equal to or greater than the evidence against it on the basis of reputable scientific studies.[51] The U.S. government has adopted a policy that all the veterans who ever served in Vietnam and adjacent waters are deemed to have been exposed to the herbicide; individuals need not prove particular exposure.[52]

The Veterans Affairs Department in its “VA’s Guide on Agent Orange Claims” indicates:

> “Under the law, veterans who served in Vietnam between 1962 and 1975 (including those who visited Vietnam even briefly), and who have a disease that VA recognizes as being associated with Agent Orange, are presumed to have been exposed to Agent Orange. These veterans are eligible for service-connected compensation based on their service, if they have one of the diseases on VA’s list of “*Diseases associated with*

exposure to certain herbicide agents." This list is found in VA's regulation, Section 3.309 (e), in title 38 of the Code of Federal Regulations. VA updates this list regularly based on reports from the National Academy of Sciences, an independent research and education institution."[53]

VA's list of "***Diseases associated with exposure to certain herbicide agents***." in VA's regulation Section 3.309 (e)

(e) Disease associated with exposure to certain herbicide agents.
If a veteran was exposed to an herbicide agent during active military, naval, or air service, the following diseases shall be service-connected if the requirements of § 3.307 (a) (6) are met even though there is no record of such disease during service, provided further that the rebuttable presumption provisions of § 3.307 (d) are also satisfied.

Chloracne or other acneform disease consistent with chloracne
Type2 diabetes (also known as Type II diabetes mellitus or adult-onset diabetes)
Hodgkin's disease
Chronic lymphocytic leukemia
Multiple myeloma
Non-Hodgkin's lymphoma
Acute and subacute peripheral neuropathy
Porphyria cutanea tarda
Prostate cancer
Respiratory cancers (cancer of the lung, bronchus, larynx, or trachea)
Soft-tissue sarcoma (other than osteosarcoma, chondrosarcoma, Kaposi's sarcoma, or mesothelioma)

Note1: The term *soft-tissue sarcoma* includes the following:
Adult fibrosarcoma
Dermatofibrosarcoma protuberans
Malignant fibrous histiocytoma
Liposarcoma
Leiomyosarcoma
Epithelioid leiomyosarcoma (malignant leiomyoblastoma)
Rhabdomyosarcoma
Ectomesenchymoma
Angiosarcoma (hemangiosarcoma and lymphangiosarcoma)
Proliferating (systemic) angioendotheliomatosis
Malignant glomus tumor
Malignant hemangiopericytoma
Synovial sarcoma (malignant synovioma)
Malignant giant cell tumor of tendon sheath
Malignant schwannoma, including malignant schwannoma with rhabdomyoblastic differentiation (malignant Triton tumor), glandular and epithelioid malignant schwannomas
Malignant mesenchymoma
Malignant granular cell tumor
Alveolar soft part sarcoma
Epithelioid sarcoma
Clear cell sarcoma of tendons and aponeuroses
Extraskeletal Ewing's sarcoma
Congenital and infantile fibrosarcoma
Malignant ganglioneuroma

Note2: For purposes of this section, the term acute and subacute peripheral neuropathy means transient peripheral neuropathy that appears within weeks or months of exposure to an herbicide agent and resolves within two years of the date of onset.

(Source: http://www.vba.va.gov/bln/21/Benefits/Herbicide/AOno3.htm retrieved 17 April 2006)

Even those who believe that they have a disease caused by herbicide exposure that is not on the above list can still apply for service-connected disabilities. “Competent medical evidence” of a causal relationship between the herbicide exposure and the disability is required, though.

In addition, benefits have been offered to children of U.S. Vietnam War veterans with a specific birth-defect. In 1996, President Clinton and VA Secretary J. Brown asked Congress to pass legislation providing health care, monthly disability compensation, and vocational rehabilitation to the children suffering from serious birth-defect spina bifida, which has been linked to the veterans’ exposure to Agent Orange. Congress passed the legislation, marking the first time the U.S. had ever compensated the children of veterans for a birth-defect associated with their parent’s exposure to toxic chemicals during their military service. VA is now providing benefits to over 800 children, including minors and adults. Brown said that medical evidence linking agent Orange to those illnesses had not shown a conclusive causal connection, only a statistical correlation. “But”, he said, “President Clinton and I firmly believe that the V.A. needs to be on the side of veterans and their children.”[54] Effective December 16, 2003, Congress authorized these benefits to children with spina bifida of certain veterans who served at or near the demilitarized zone in Korea between September1, 1967 and August 31, 1971, where Agent Orange is known to have been sprayed.[55]

In 1984, seven chemical companies, including Dow and Monsanto, agreed to establish a $180 million fund to settle a lawsuit with Vietnam Veterans who claimed that their health had been affected by exposure to the herbicides including Agent Orange. Ironically, the judge who persuaded the companies to buy themselves out of protracted litigation was Weinstein.[56] Similar claims of the veterans of allied forces from Australia, Canada and New Zealand were also settled by the fund. Koreans were excluded.

“There is no reason why those who sprayed chemical products got compensation... and the direct victims’ suit is rejected by an American Court,” said a Vietnamese professor who participated in a campaign to drum up support for the US veterans case.[57] In their view, the chemical companies earned huge profits at the expense of pains and sufferings of millions of Vietnamese people.[58]

7. Some Other Facts

In what Vietnamese people call “the U.S. war of aggression in Vietnam”, the U.S. used numerous ‘sophisticated’ weapons developed with most advanced technologies available at that time except for nuclear weapons. Notorious napalm bombs, cluster bombs and what was later called “Daisy Cutters” were among them. “Daisy Cutter” containing a carcinogenic substance at its warhead is the most powerful conventional weapon, which

some scientists suspect is actually a poison gas weapon. Even “meteorological warfare” was carried out by artificially making acid rain fall on the enemy. The total number of civilians killed in the war, apart from the 1.3 million combatant casualties, was 4 million. In addition to this, 1.7 million combatants were injured. The number of injured civilians is not known.[59] War Crimes committed by the U.S. in Vietnam is, therefore, not limited to the spraying of toxic chemicals. Yet, its long-term and insidious effects are most devastating.

Given the U.S. refusal to accept responsibility, the issue of Agent Orange has to be examined from a larger perspective of the legitimacy of using excessively harmful weapons and toxic substances, which are not specifically prohibited by international legal instruments.

Putting nuclear weapons aside, which are beyond the scope of this paper, depleted-uranium (DU) weaponry is worth mentioning. DU has chemical and radiological toxicity that contaminates air, water, soil and consequently the food chain. Its half-life is 4.4 billion years. A growing body of compelling scientific and medical research suggests it has long-term adverse consequences for the environment and human health. DU munitions were used extensively in Iraq and Afghanistan by US-led coalition forces, and in the Balkans by NATO. During the Gulf War in 1991, 375 metric tons of DU weapons were used in Iraq. In what the U.S. president calls “War on Terror” launched in 2001, 2,200 tons and 1,000 tons of DU have been dumped in Iraq and Afghanistan respectively.[60] In fact, a significant increase of illnesses and birth-defects has been observed among Iraqis, the Gulf War veterans and their children. A United Nations human rights body condemned its use, while the World Health Organization and the U.S. government stress there is no proof on the causation.

In addition to the War on Terror, a “War on Drugs” has been employed by the U.S. as justification for inflicting damages on public health and the environment in other countries. Toxic herbicides have been sprayed on a massive scale to eliminate drug yielding crops earlier in Afghanistan and in recent years in Columbia, Bolivia and Peru. The U.S. has not always engaged itself in the aerial campaign but has been funding it. The herbicides used in the campaign do not contain dioxin, but they are still toxic. For instance, an herbicide commonly used in Colombia is “Roundup Ultra” a broad-spectrum Monsanto product which destroys adjacent food crops, contaminates water supplies and limits bio-diversity along with the “offending” plants, particularly when massive quantities are dumped from a high altitude, which is actually the case.[61]

8. Conclusion

The U.S. District Court’s dismissal has added further anguish to the victims and their families living in frustration for decades due to the absence of justice, in addition to the

physical torments and poverty-related problems. I am not in a position of making a judgment on the causal relationship between their health hazards and Agent Orange. However, very rare and severe forms of deformities and skin problems of the victims, which are hardly seen in other impoverished countries, and the unusually high rate of birth -defects, appear to easily defeat the U.S. government's attribution of those defects and illnesses to mal-nutrition or poor hygiene. This strongly suggests the existence of an actor, and it is AO/dioxin according to the voluminous data gathered by the medical doctors and scientists in Vietnam, Korea and the U.S.

In criminal law, a defendant is deemed innocent unless his/her crime has been proven beyond reasonable doubt. However, in this case, moral responsibility of the defendant-companies and the U.S. government remains even if the U.S. courts fail to hold them legally accountable. It is undisputable that the chemical companies produced and supplied chemicals containing poison to the U.S. government for ten years, which the U.S. military and its allies sprayed excessively in Vietnam for fourteen years. All parties were aware of the potential harm to humans and the environment. Judge Weinstein admitted, although implicitly, that such action, if carried out today, would contradict the existing international law.[62] Treaties, needless to say, do not apply retroactively, but what they did to Vietnamese three to four decades ago is unacceptable in today's world from humanitarian perspective. No state claims the right to poison. Should the Appellant Court for the Second Circuit endorse Weinstein's ruling, it would make it easier for the U.S. to continue to evade legal, if not moral, responsibility, for the consequences of its military actions.

The Appellant Court, in my view, should at least recommend chemical companies to settle out-of-court as Judge Weinstein did for U.S. Vietnam War veterans. The same logic and standard — extremely low probability required — should be applied to the Vietnamese, since the value of life of a Vietnamese is surely the same as that of a U.S. citizen. If the Court plans to deliver jurisprudence on merit, first of all, alleged damages and scientific data should be thoroughly examined. The cases of the Atomic Bomb victims d Minamata tell us that legal remedies should be provided on the basis of scientific and epidemiological data rather than the proof of causation in individual cases of victim's health ailments.

The U.S. Justice Department fears that "opening the courts to cases brought by former enemies would be a dangerous threat to presidential power to wage war." It is in fact an expected impact of this class action. As Judge Weinstein pointed out, international law is internalized by〔the U.S.〕courts as law of the United States.[63] The U.S. government should contemplate the moral and legal responsibilities of their military action under international law before resorting to war. Compensation to victims and the expenditures for cleaning-up

the contamination should be calculated and taken into account as part of the cost of war. With regard to what the U.S. has done already, the government should consider humanitarian aid to the victims. In this particular case, the plaintiffs' claim for the cleaning up of the contaminated areas by those responsible does not appear to have legal ground solid enough to be successful. However, the moral responsibility of the U.S. government and the chemical companies still remains. The same issue is also important in case of the DU contamination.

The development of 'sophisticated' weapons such as nuclear weapons, depleted-uranium weapons, cluster bombs, chemical and biological weapons, has made war the largest scale denial of human rights, and destruction of the environment and the ecosystem. However, States along with the military industry, never stop making endeavors to create even more advanced weapons, which were not foreseen when the existing treaties were drafted and consequently not specifically prohibited. I would argue that it is time to replace the narrow interpretation on the scope of international restrictions on wartime use of weapons and instruments of combat by a broader and progressive interpretation that all weapons or instruments of combat are forbidden unless they are specifically permitted. States should share a common list of permitted weapons and means of combat, instead of those prohibited. It is one of the most pressing but challenging agenda the international community is currently faced with.

Notes

1 The author participated in the International Convention on Agent Orange Product Litigation (hereafter Hanoi Convention) of lawyers, scientists, medical doctors and the representatives of the Vietnam Association for Victims of Agent Orange/Dioxin ("VAVA") that was held in Hanoi in February 2005 as a representative of the Japan Lawyers International Solidarity Association, an affiliate of the International Democratic Lawyers Association (IADL). It gave her an opportunity to meet with the victims including children (second and third generation victims) suffering deformities, defects and consequent disabilities and listen to their accounts.

2 The Vietnam Association for Victims of Agent Orange/Dioxin (VAVA) leaflet; and BBC News of 10 March 2005 http://news.bbc.co.uk/go/pr/fr/-/2/hi/americas/4336941.stm retrieved 15 February 2006.

3 The figure is a Vietnamese authorities' estimate. Tran Xuan Thu, Vice President of the VAVA in his speech on 20 February 2006 in the Hanoi Convention; and BBC News of 10 March 2005, *supra note* 2.

4 Judge Jack B. Weinstein, U.S. District Court of New York, 373F. Supp. 2d7, E.D.N.Y.2005, 60, 182–189.

5 I owe this idea to a leading treatise of Hisakazu Fujita (2003), *Droit International Humanitaire*, Tokyo: Yushindo, 98.

6 H. Lindsey Arison, *Executive summary: The Herbicidal Warfare Program in Vietnam 1961–1971, Operations Trail Dust/Ranch Hand*, http://members.cox.net/linarison/orange.html retrieved 15 September 2006.

7 Weinstein, *supra note* 4, 23.

8 *Ibid*., 39.
9 Arison, *supra note* 6.
10 Tran Xuan Thu, Vice President of VAVA, Report "Agent Orange/Dioxin is a War Toxin" submitted to Hanoi Convention in February 2006.
11 Dang Vu Hiep, President of VAVA, Report submitted to the "Conference on Supporting Victims of Agent Orange/Dioxin in Vietnam" in Ho Chi Minh City, 25 July 2004.
12 The U.S. Department of Veterans Affairs in its "VA's Guide on Agent Orange Claims" http://www.vba.va.gov/bln/21/Benefits/Herbicide/AOno3.htm retrieved 17 April 2006. Emphasis added.
13 Institute of Medicine, *Veterans and Agent Orange*: Update 2004, published 4 March 2006. http://www.iom.edu/CMS/3793/4689/25476.aspx retrieved 17 April 2006.
14 *Ibid*.
15 Arnold Schecter et al., "Agent Orange and the Vietnamese: the persistence of elevated dioxin levels in human tissues" in *American Journal on Public Health*, 1995.
16 *Ibid.; See also* Arison, *supra note* 6.
17 BBC News of 14 June 2004, "Vietnam's War against Agent Orange" http://news.bbc.co.uk/2/hi/asia-pacific/3798581.stm retrieved 15 September 2006.
18 Hajime Kitamura (2005), *U.S. Chemical War Crimes: Testimonies of Agent Orange Victims in Vietnam*, Tokyo: Nashinokisha, 255–267.
19 Jeanne Mager Stellman et al., "The Extent and Patterns of Usage of Agent Orange and Other Herbicides in Vietnam", *The Nature* No.442 of April 17, 2003, 681f. cited in Judge Jack B. Weinstein, *supra note* 4, 18.
20 Arnold Schecter and John D. Constable, "Commentary: Agent Orange and birth defects in Vietnam", *International Journal of Epidemiology*, 2006; Arnold Schecter et al., "Food as a Source of Dioxin Exposure in the Residents of Bien Hoa City, Vietnam", *Journal of Occupational and Environmental Medicine*, 2003.
21 "Appeal adopted at the Conference in support of the Victims of Agent Orange/dioxin in Vietnam", Ho Chi Minh City, 25 July 2004.
22 Kitamura, *supra note* 18, 323.
23 *Ibid*., 286–291.
24 BBC News of 14 June 2004, *supra note* 17.
25 See Kitamura, *supra note* 18, 48–254.
26 Dang Vu Hiep, *supra note* 11.
27 Tran Xuan Thu, *supra note* 10.
28 Weinstein, *supra note* 4, 17, 129, 232.
29 The plaintiffs' pleadings indicated the relevant facts that prove the companies' knowledge based on scientific research and their workers' health ailments.
30 The plaintiffs' pleadings; *See also the American Society of International Law* http://www.asil.org/ilib/2005/03/ilib050319.htm#j3 retrieved 15 February 2006.
31 Weinstein, *supra note* 4, 218–221.
32 *Ibid*., 42.
33 *Ibid*., 24.
34 BBC News of 10 March 2005, *supra note* 2.
35 Tom Perrotta, *New York Law Journal*, 11 March 2005 on http://www.law.com/jsp/article.jsp?id=1110449112884; *Asia Times*, 16 March 2005 on http://www.atimes.com/atimes/Southeast_Asia/GC16Ae02.html both retrieved 15 February 2006.
36 BBC News "Vietnam fury at Agent Orange case" 11 March 2005 http://news.bbc.co.uk/2/hi/asia-pacific/4339419.stm; *Asia Times*, *supra note* 34; Tran Xuan Thu, *supra note* 3.
37 Weinstein, *supra note* 4, 184–185.

38 *Ibid*., 192.
39 Plaintiffs-Appellants' Opening Brief submitted to the Court of Appeals, 65–67.
40 Weinstein, *supra note* 4, 184–186.
41 *Ibid*.
42 See Fujita, *supra note* 5, 101.
43 BBC News of 14 June 2004, *supra note* 17.
44 Yonhap News, 15 February 2006 http://www.vn-agentorange.org/yonhap_20060215.html retrieved 17 April 2006.
45 Korean Times, 15 February 2006 http://www.bhopal.net/opinions/archives/2006/03/index.html; and Green Left Weekly, 15 February 2006 http://www.greenleft.org.au/back/2006/656/656p18b.htm both retrieved 16 February 2006.
46 *Ibid*.
47 Korea Shimpo News PIC-UP 1999 http://www1.korea-np.co.jp/sinboj/sinboj1999/sinboj99-11/sinboj991129/sinboj99112982.htm# retrieved 15 September 2006.
48 Yonhap News, *supra note* 44.
49 Korea Shimpo News, *supra note* 47.
50 BBC News of 14 June 2004, *supra note* 17.
51 Todd S. Purdum, "Clinton Orders Expanded Agent Orange Benefits for Veterans", the New York Times 29 May 1996, http://query.nytimes.com/gst/fullpage.html?sec=health&res=9B07E7DE1E39F93AA15756C0A960958260 retrieved 15 September 2006.
52 Purdum, *ibid.; See also* the U.S. Department of Veterans Affairs in its "VA's Guide on Agent Orange Claims", *supra note* 12.
53 The U.S. Department of Veterans Affairs, *supra note* 12.
54 Purdum, *supra note* 51.
55 The U.S. Department of Veterans Affairs, *supra note* 12.
56 Perrotta, *supra note* 35.
57 BBC News of 11 March 2005, *supra note* 36.
58 "Appeal of the Conference in support of the Victims of Agent Orange/dioxin in Vietnam", *supra note* 21.
59 Vietnamese government's statement on 4 April 1995.
60 *See* International Action Center, "Metal of Dishonor" http://www.iacenter.org/depleted/appeal.htm; "Hiroshima Appeal to Ban Uranium Weapons" at The 3rd International Coalition to Ban Uranium Weapons (ICBUW) International Conference, 6 August 2006 http://www.bandepleteduranium.org/modules.php?name=News&file=article&sid=199 retrieved 15 September 2006.
61 *See* Kevin B. Zeese et al., *The Effective National Drug Control Strategy 1999*, http://www.csdp.org/edcs/; Rick Bayer, *US Military Interference in the Colombian Civil War*, http://www.alternativesmagazine.com/18/bayer.html; Heather Wokusch, *US Military Wreaks Worldwide Environmental Havoc*, http://antiwar/com/orig/wokusch.php?articleid=1761 all retrieved 17 April 2006.
62 Weinstein, *supra note* 4, 129.
63 *Ibid*., 14.