

OVERCOMING CONSEQUENCES OF CHEMICAL WAR- A DIFFICULT AND LONG-TERM TASK

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1. The chemical war conducted by American Army in the South of Vietnam was the biggest chemical war in history of mankind

In 1959, the War Research Branch of American based in Fort District, Maryland had been successful in maneuver of spraying a mixture of chemicals such as butyl ester, 2,4-D, 2,4,5-T for destroying crops. This achievement had been rapidly recorded by Ministry of Defense and a program for spraying these herbicides and defoliants in battle fields in the South of Vietnam was initiated.

After being inaugurated, President E. Kennedy had held a meeting with National Security Council in January 15th 1961 and declared "...in order to prevent communists from invasion of South Vietnam, I declare to use herbicides and other innovative technologies for control land and sea roads along border lines of Vietnam". Immediately, equipments and a huge amount of toxic substances were transported into the South of Vietnam. On August 10th, 1961 the first air mission was carried out for chemicals spraying along national road 14, in the north of Kontum town. Therefore, the day August 10th is chosen to be "The day of Agent Orange's Victims".

Approximately 10 years passed with three generations of American presidents, US Army had sprayed about 80 million liters of toxic chemicals over the South of Vietnam including 20 different toxic substances in which Agent Orange, a mixture of 2,4-D and 2,4,5-T, was a significant composition.

Herbicide 2,4,5-T is an organic compound contained chlorine. This substance does not only exist in Agent Orange but also appearing in other toxic chemicals (such as purple, blue agent...). Due to the manufacture technology of 2,4,5-T, a by-product called dioxin (2,3,7,8- Tetra Chloro Dibenzo Dioxin-TCDD) is created. With an extremely tiny amount about part per billion, dioxin could cause cancer and reproductive failures in test animals. American scholars have presented different data of estimated dioxin quantity sprayed over the South of Vietnam. (170 kg as A.H. Westing, 366 kg as J. Stellman). Scientists from Vietnam- Russia Tropical Center reported much higher estimation (about 1000 kg).

However, the term toxic chemicals or chemical war have been ignored in front of public and Courts. They only accept that they used herbicides and defoliants as they used to do in other places. The term "toxic chemicals" and "chemical war" are considered to be "sensitive" because chemical companies who produced these substances involve in. This is explained by two reasons:

- First, a huge amount of herbicides and defoliants were used with exceeded concentration permitted for weed clearance and defoliation purposes (20 to 30 folds over permitted concentration) and then these herbicides and defoliants has seriously destroyed ecosystem and affected human health. A basic principle of toxicology is reminded: any chemical can be toxic and any chemical can be non-toxic, the matter of fact is dose. Being over permitted dose, the non-toxic could be toxic substance even very toxic.

- Second, herbicides and defoliants do contain dioxin, the most toxic substance in toxic substances ever found by human. Chemical companies who produced herbicides and defoliants containing dioxin must be responsible for this toxic product. Scientists around the world, including American scientists have affirmed that dioxin causes very various diseases especially cancer, reproductive failure and congenial malformation. Until now, the typical signs that differentiate between effect of dioxin and effect of other factors available in environment have not been found yet. Taking the point, some people are trying to disparage scientific evidences about bad effects of toxic chemicals containing dioxin in Vietnam. This way of access is non-scientific and unscrupulous.

Factually, the USA has been in contradiction itself with opponents of America chemical company's attorneys and Brooklyn district court in last March 2005. The event that American chemical companies under US Court's negotiation had to pay \$180 millions compensation to get claim waiver from US veterans poisoned with toxic chemicals, had indirectly recognized the bad effect of toxic chemicals on these veterans. Previously, in February, 1967, being aware of harms of toxic chemicals containing dioxin, about 5000 American scientists including 17 Nobel receivers and 129 academicians of US National Academy of Science had required President Lyndon Johnson to immediately cease this deleterious chemical war.

2. Consequences of chemical war still prolonged through decades

According to insufficient statistic, 25,585 villages and hamlets in South Vietnam had been sprayed with toxic chemicals. During chemical war, there are 14 millions inhabitants, about 2 millions officers and soldiers from the North lived and served in the in the South of Vietnam. Scientists from Columbia University (USA) had estimated minimum 2.1 millions and maximum 4.8 millions Vietnamese people have been suffered from toxic chemicals.

Total 3,104,000 ha (17% area natural forest) of forest area including 2,954,000 ha of domestic forest (95% and rest 5% is marsh forest) was sprayed with toxic chemicals. Amount of wood destroyed due to toxic chemicals was about 82,830,000 m³ (approximately \$billion).

In sprayed areas, though dioxin concentration has been significantly decreased but the consequences are very obvious. Soil and land are degraded, ecosystems destroyed, and many kinds of animals and plans deteriorated. More seriously are the weak recovery ability of ecosystem and possibility of disappearance of watershed protective forest.

In some areas used to be army depots and US army's air fields, concentration of dioxin is reported high and very high (even up to hundred thousands ppt while permitted dioxin concentration in agricultural soil is 1000 ppt in USA). The expense is estimated over hundreds billions VND for detoxification conducted in some air fields which currently regarded as "hot spots", by mechanic land fill combined with biochemical method.

Due to the sophistication of disease mechanism and under monitoring and diagnostic condition in Vietnam, we have been unable to determine sufficient quantity of toxic chemical's victims. Many patients died due to unclearly diagnosed diseases. Many people are in incubation period, which means just some alternation of metabolic conversion and gene without any expression.

The most concerning currently are congenial malfunction children due to toxic chemicals. There are 169,193 of first generation (F1) and 5,505 people of second generation (F2) in an investigation on 174,198 toxic chemical's victims. Is there possible to find any congenial deformity in third generation (F3) in next 20 years? It is probable to occur because some scientists have recently found gene mutation in victims of toxic chemicals. There maybe no disease expressed but it could be appeared in their second or third generation. Congenial deformity due to toxic chemicals is various and multi form

in a certain body. Therefore, these victims are usually in serious diseases which are physical, mental burdensome themselves and society.

Loss due to chemical war is extremely huge in many aspects. We have not had any sufficient research work to thoroughly and precisely determine economic, social, environment and human damage caused by this unique war in mankind history.

3. Overcoming consequences of chemical war- A difficult, long-term and sophisticated task

Early in 70's decade, Professor Ton That Tung and some Vietnamese scientists has considered to the damage of chemical war, especially the effects on liver cancer, reproductive failure and congenial deformity. Initial researches on the dioxin residue in human body and environment of Vietnam were conducted and published by American researchers, Baughmann and Messelson in 1973.

In October, 1980, Vietnamese Government established the National Committee for Investigation on Consequences of toxic chemicals used in Vietnam War (The Committee 10-80). The Committee has collected domestic and international information, conducted many research projects, and determined the scale and consequences of chemical war in Vietnam.

In order to basically shift from investigation to overcoming consequences of toxic chemicals, Vietnam Prime Minister had dissolved the Committee 10-80 in March 1st, 1999 and promulgated Decision no. 33/1/1999 to found The National Steering Committee for the Overcoming Consequences of Toxic Chemicals used in Vietnam War (National Steering Committee 33). Head of National Steering Committee 33 was Minister of Ministry of Science, Technology and Environment. Being participated in the Committee 33 were leaders of national ministries such as Defense, Foreign Affair, Health, Justice, Labor- Invalids and Social Affairs, Government Office... After the Ministry of Natural Resources and Environment (the MONRE) established, Prime Minister has issued the Decision no. 173/2002 in December 12th, 2003 to assign Minister of the MONRE as the Head of National Steering Committee 33. Assisting to National Steering Committee 33 is the Office of National Steering Committee 33 headquartered in the MONRE.

National Steering Committee 33 is in charge of steering; instructing and coordinating with related ministries and departments for conducting organization of tasks on overcoming the consequences of chemical war. Series of activities had and have been deployed on fields such as research on detoxification, environment recovery, disease identification, proposal on policy to victims of toxic chemicals...

Up to now, over 209,000 toxic chemical's victims have been benefited from subsidy regulation according to Decision no. 120/2004/Prime Minister Decision for people served in resistance as well as their ill- offspring due to toxic chemicals; 3,400 families with two or more than two victims will be benefited from Decision no. 16/2004/ Prime Minister Decision. In parallel to governmental supports, other politic- social, charity-humanity organizations have many useful activities in victim relief especially the Agent Orange Fund, Vietnam Association for Victims of Agent Orange-Dioxin. Physical and mental life of hundred thousands of victims have been supported and ameliorated as well as being health care serviced.

However, the burden of consequences of chemical war is still ahead. Heavily contaminated areas due to toxic chemicals must be isolated, localized and detoxified. Solutions for ecosystem and environment recovery need to be synchronized with warranty of health and life of residents in sprayed areas. Being concentrated on instruction and organization of function rehabilitation for victims in community and community-based, especially for about 200 thousand congenial deformity children; on one hand, being well organized and operated remediation centers and basis for toxic chemical's victims are necessary and exigent. Furthermore, gradual establishment of consulting stations for reproductive health in order

to restrict congenial deformity children being born. These works require mobilizing huge efforts from people as well as materials in a long period. The expense for the overcoming consequences of toxic chemicals used by USA during Vietnam War is estimated to reach up to ten thousands of billions VND.