

ENVIRONMENTAL WARFARE AND ECOCIDE FACTS, APPRAISAL AND PROPOSALS

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I

In Indochina during the past decade we have the first modern instance in which the environment has been selected as a « military » target appropriate for comprehensive and systematic destruction. Such an occurrence does not merely reflect the depravity of the high-technology sensibilities of the war-planners. It carries out the demonic logic of counterinsurgency warfare, especially when the insurgent threat is both formidable and set in a tropical locale. Recourse to deliberate forms of environmental warfare is part of the wider military conviction that the only way to defeat the insurgent is to deny him the cover, the food, and the life-support of the countryside. Under such conditions bombers and artillery seek to disrupt all activity, and insurgent forces find it more difficult to mass for effective attack. Such policies have led in Indochina to the destruction of vast tracts of forest land and to so-called « crop-denial programs ». The U.S. Government has altered tactics in recent years, shifting from chemical herbicides to Rome Plows as the principal means to strip away the protective cover of the natural landscape, but the basic rationale of separating the people from their land and its life-support characteristics persists. Such policies must be coupled with the more familiar tenets of counterinsurgency doctrine which seek to dry up the sea of civilians in which the insurgent fish attempt to swim. This drying up process is translated militarily into making the countryside unfit for civilian habitation. To turn Indochina into a sea of fire and compel peasants to flee their ancestral homes was consciously embodied in a series of war policies including « free-fire zones », « search and destroy » operations, and the various efforts to move villagers forcibly into secure areas. Therefore, it is important to understand the extent to which environmental warfare is linked to the overall tactics of high-technology counter-insurgency warfare, and extends the indiscriminateness of warfare carried on against people

to the land itself. Just as counter-insurgency warfare tends toward genocide with respect to the people, so it tends toward ecocide with respect to the environment.

It may be more than coincidental that at the historical moment when we are in the process of discovering the extent to which man's *normal* activities are destroying the ecological basis of life on the planet that we should also be confronted by this extraordinary enterprise in Indochina of deliberate environmental destruction. These conscious and unconscious tendencies need to be linked in any adequate formulation of the world order challenge confronting mankind. It is also worth noting that so far, at least, the target area of environmental warfare is the Third World, a sector of world society that has largely disavowed the relevance of the ecological agenda to its schedule of priorities. Environmental warfare is a dramatic reminder of the extent to which the planet as a whole must mobilize a response to the ecological challenge to sustain life on earth and beat back reversions to barbarism emanating from the « advanced » regions and applied to those that are relatively « backward ». It is a form of dangerous provincialism for the countries of Asia and Africa to call for « benign neglect » when it comes to this subject-matter; perhaps the relevance of ecological issues can be grasped more clearly by Third World leaders and peoples in relation to environmental warfare.

II

On a more technical level there are several issues of related concern that need to be considered. First of all, it seems important to assess the extent to which patterns of environmental warfare violate existing criteria of legal judgment. Secondly, there is a need to promote the development of new law that captures the uniqueness of recent developments and anticipates future dangers; in particular, the search for clear standards of legal prohibition directed explicitly toward environmental warfare might help shape future conduct. Many governments have been reluctant to protest against what the United States has been doing in Indochina and so have avoided a concern with environmental warfare. At this stage it is possible to formulate, at least, a series of public demands around which popular support needs to be rallied if governments and world institutions are going to join in the movement for rectifying action.

III

In considering the relevance of international law I wish to make several preliminary points that bear on more specific assessments :

- 1) The connection between treaties and customary international law;

- 2) The role of world community consensus in interpreting the requirements of international law;
- 3) The importance of principles of customary international law for the interpretation of the legal status of disputed tactics of warfare;
- 4) The importance of moral considerations in judging what is permissible behavior of governments and their officials;
- 5) The significant distinction between the *illegality* of governmental conduct and the *criminality* of individual conduct (whether or not in the line of official duty).

1. THE CONNECTION BETWEEN TREATIES AND CUSTOMARY INTERNATIONAL LAW

There has been a tendency by governments to confine the scope of the law of war to treaty law. Such confinement is improper. Even the US Army Field Manual 27-10 acknowledges that customary international law complements treaty rules. It is important to understand that customary norms exist and apply because of the degree to which weaponry and battlefield tactics have evolved since the basic treaties were formulated at the law of the century. The broad lawmaking treaties in 1907 bearing on the law of war were themselves specific embodiments of general principles of belligerent restraint as they related to war technology and tactics existing at that time. These customary principles, more than the treaty rules they gave rise to, remain the primary basis for giving legal substance to the law of war in the face of a drastically altered technological and military environment. New treaties would be desirable, because of their capacity to generate agreed interpretations of the specific implications of new weaponry and tactics in relation to the customary principles underlying the law of war. Such treaties could provide authoritative reading of limits on state behavior and would also be more likely to engender respect as contemporary government officials would have taken part in the reformulation process and renewed their commitments by participating in the treaty-making rituals of solemnity¹. But in the absence of a new round of Hague-type conferences the best ground that exists for legal judgment is to examine contested belligerent practices in light of the more general policies to which they gave expression. Customary principles of international law (see section (3) below) are of great importance in an effort to understand the legal status of the various dimensions of environmental warfare.

¹ Such an argument is convincingly set forth in CHAVES, A., « An Inquiry into the Workings of Arms Control Agreements », *Harvard Law Review*, vol. 85 (March 1972), pp. 905-969.

2. THE ROLE OF WORLD COMMUNITY CONSENSUS IN INTERPRETING THE REQUIREMENTS OF INTERNATIONAL LAW

The increasing number of actors, their diversity, and the complexity of international life make it more difficult to rely upon procedures based on *governmental consent* to develop either binding new interpretations of old rules or the generation of new rules of international law. In such a context a *consensus* of governments acting within the *scope* of *formal procedures* is increasingly viewed as capable of generating authoritative interpretations and standards. The most significant arena wherein these newer procedures of law-creation have been used is the General Assembly of the United Nations. The status of these resolutions remains controversial, especially among the more sovereignty-oriented governments, but I think the record of reliance on such resolutions in areas of arms control, space, and human rights creates a body of practice in support of the contention that these resolutions can, where intended by a large majority of governments, declare and create law. It is true that the *degree* of authoritativeness and effectiveness of such lawmaking activity will depend on a number of factors including the strength and quality of consensus, the strength and quality of dissent, the specificity of demand, the willingness to implement conformity with prior legal and moral expectations. The basic point is that the General Assembly now possesses a quasi-legislative competence that needs to be seriously considered whenever it is relevant, especially when it sets forth a prevailing interpretation of the content of a previously agreed upon legal rule.

3. THE IMPORTANCE OF PRINCIPLES OF CUSTOMARY INTERNATIONAL LAW FOR THE INTERPRETATION OF DISPUTED TACTICS OF WARFARE

Four principles of customary international law provide guidelines for the interpretation of any belligerent conduct not specifically covered by valid treaty rule :

I. *Principle of necessity.*

No tactic or weapon may be employed in war that inflicts superfluous suffering on its victims even if used in the pursuit of an otherwise reasonable military objective;

II. *Principle of humanity.*

No tactic or weapon may be employed in war that is inherently cruel and offends minimum and widely shared moral sensibilities;

III. *Principle of proportionality.*

No weapon or tactic may be employed in war that inflicts death, injury, and destruction disproportionate to its contribution to the pursuit of lawful military objectives;

IV. *Principle of discrimination.*

No weapon or tactic may be employed in war that fails to discriminate between military and non-military targets and that is either inherently or in practice incapable of discriminating between combatants and noncombatants.

These four principles are general and are admittedly difficult to apply to the complexities of the battlefield. However, a rule of reason can be used to identify patterns (as distinct from instances) of clear violation, where the weapons and tactics are used in such a way as cannot be reasonably construed as compatible with these principles of overriding constraint. Such principles also reflect a minimum moral content that underlies the whole enterprise of a law of war, admitting its inevitable horror, but still striving for a mitigating framework of restraint.

Customary principles of international law are especially important in relation to the law of war because of its dynamic character. The underlying commitment of governments to restraint depends upon the interplay between good faith adherence to these four principles and the actualities of war. The famous DeMartens clause inserted in the Hague Conventions acknowledged this importance :

« Until a more complete code of the laws of war has been issued, the high contracting Parties deem it expedient to declare that, in cases not included in the Regulations adopted by them, the inhabitants and belligerents remain under the protection and the rule of the principles of the law of nations, as they result from the usages established among civilized peoples, from the laws of humanity, and the dictates of public conscience. »

Widely ratified treaties such as the 1925 Geneva Protocol on Gas, Chemical, and Bacteriological Warfare may also attain the status of customary international law by virtue of a consensus among governments active in the world community — even if the consensus falls short of unanimity — and thereby bind non-parties. The reasoning here is analogous to that used in section (2) to discuss the potentially authoritative status of General Assembly Resolutions purporting to interpret a treaty. G.A. Resolution 2603A (XXIV), which extends the coverage of the Geneva Protocol to tear gas and herbicides, illustrates both an effort to make a binding interpretation of a treaty rule and to extend the coverage of the treaty to the entire community including non-parties. In the text of G.A. Resolution 2603A « the General Assembly... called for the strict observance by all States of the principles and objectives of the Geneva Protocol »

and « Declares as contrary to the generally recognized rules of international law as embodied in the Geneva Protocol » the use of tear gas and chemical herbicides. The point here, which will be discussed later, is that the United States is bound by « the principles and objectives » of the Geneva Protocol, including the interpretation of its scope even though it has not ratified the treaty. In essence, such a conclusion reflects the view that an impartial third party — for instance, the International Court of Justice — would find that the United States is bound by the Geneva Protocol and by the interpretation of its scope affirmed by the overwhelming majority of governments. Such a prediction may be made either because the Resolution is itself law-proclaiming and authoritative or because it is indeed an accurate declaration of the proper meaning of the Geneva Protocol (and parallel norm in customary international law).

As a practical matter, U.S. ratification may still be important because much of the international law of war depends for effective application upon self-enforcement, especially when the actor is a major state not in conflict (and hence not deterred by) another major state. The United States would be much more likely to respect the Geneva Protocol, as generally, if it explicitly ratified the treaty, even though it remains the case that it is bound by its terms even prior to ratification².

A final point has to do with the common contention that governments have generally used whatever weapons and tactics seemed to confer upon them a military advantage without according much, if any, heed to restraining principles of customary international law, or for that matter, of treaty law. There is even a common misunderstanding that a claim of military necessity overrides legal restraints. The agreed understanding of governments embodied in the law of war is that legal restraints have been formulated with due regard for military necessity, and that any further unilateral abridgements are violations. To say that the law of war is frequently violated is merely to affirm that governments are not very law-abiding in this area, and are indeed criminally disposed, especially where their vital interests are at stake. Such a conclusion argues more for a different system of law enforcement — perhaps spearheaded by a law-minded citizenry — than for a suspension or negation of these international rules. Also, there is evidence, even bearing directly on the use of gas in war, to suggest that legal restraints were respected including by the United States, despite the fact that it has not been a party to the Geneva Protocol, and despite the prospect of some military advantage resulting from the use of gas in the Pacific island warfare against the Japanese during World War II.

² Indeed, it could diminish the scope of its obligation by accompanying its ratification with either a reservation or a statement of understanding which maintained the option to use herbicides and riot control gasses.

4. THE IMPORTANCE OF MORAL FACTORS IN JUDGING WHAT IS PERMISSIBLE BEHAVIOR OF GOVERNMENTS AND THEIR OFFICIALS

The law of war attempts to reconcile minimum morality with the practical realities of war. This reconciliation is best summarized in the four principles of customary international law. The moral sense of the community provides a legislative direction for the growth and understanding of international law. In no area is it as appropriate as in relation to war to contend that « the law » does and should reflect that which ought to have been done or not done by governments and their representatives. Morality, in this sense, attempts to fill the legislative vacuum created by the institutional deficiencies of international society and adapt law to some extent to the rapidly changing realities of war. In this sense the growth of the international law of war may contain a greater element of retroactivity than in the more developed constitutional systems of domestic society, but the retroactivity exists only on a legalistic plane. The Nuremberg initiative provides our most dramatic illustration of a legislative spasm in international law that rested on the firmest grounds of shared morality, but aroused criticism from legalistically inclined observers³. The Indochina context, given the public outrage over the desecration of the land at a time of rising environmental consciousness, creates a target of opportunity comparable to Nuremberg. Surely it is no exaggeration to consider the forests and plantations treated by Agent Orange as an Auschwitz for environmental values, certainly not from the perspective of such a distinct environmental species as the mangrove tree or nipa palm. And just as the Genocide Convention came along to formalize part of what has already been condemned and punished at Nuremberg, so an Ecocide Convention could help carry forward into the future a legal condemnation of environmental warfare in Indochina.

5. THE SIGNIFICANT DISTINCTION BETWEEN THE ILLEGALITY OF GOVERNMENTAL CONDUCT AND THE CRIMINALITY OF INDIVIDUAL CONDUCT

International law is most characteristically concerned with regulating the behavior of governments. The laws of war are binding on governments, although national legal systems generally make the laws of war binding on combat personnel and provide criminal sanctions applicable in the event of violations⁴.

³ For range of responses see Bosch, W.J., *Judgment on Nuremberg : American Attitudes toward the Major German War-Crime Trials*, Chapel Hill, N.C. (U. of North Carolina Press), 1970.

⁴ The Geneva Conventions of 1949 even have a common provision obliging Parties to the treaties « to enact any legislation necessary to provide effective penal sanctions » for persons committing or ordering « grave breaches ».

As well, the Nuremberg approach makes individuals criminally liable for violations of the laws of war even if the violations were committed in the line of duty and in deference to orders issued by bureaucratic or military superiors. That is, international law directs that individual conformity with the laws of war take precedence over normal obligations to domestic law or military and civilian lines in command. The practical consequences of such a directive have engendered many difficulties during the Indochina War for conscientious Americans. The Nuremberg obligation may be taken more seriously in the United States than elsewhere because of a tradition of respect for individual conscience and because the war crimes trials after World War II were so greatly a reflection of American initiative. Daniel Ellsberg and Anthony Russo, draft and tax resisters, and an expanding national movement of civil disobedience all draw support from the wider logic of Nuremberg which implies not only a citizen's duty to refuse participation in illegal war policies or an illegal war, but also creates a legal basis for individual action to prevent governmental crimes of war.

IV

It is now possible to assess the legality of the main components of environmental warfare as it has been waged in Indochina. It is important legally to distinguish between weapons and tactics that are designed to damage the environment and those that, like bombs, are designed to strike human or societal targets, but may also, as a side effect, damage the environment. It is also important to distinguish between specific occasions of environmental warfare and persistent patterns of warfare that produce cumulative effects on ecosystems that can be properly called « ecocide » or policies that can be designated as « ecocidal ». And, finally, it is necessary to decide whether the scope of environmental warfare includes the human effects of these weapons. The issue on one level is whether man is to be conceived, for this purpose, as an integral element of « the environment »; at a more practical level the issue is whether human side effects of chemical weapons like 2, 4, 5-T are to be included in a discussion of environmental warfare. The problem with the more expansive definition is that all forms of warfare are detrimental to man and his artifacts, and in this sense all warfare could be conceived to be environmental (or ecological) warfare, thereby missing the distinctive feature of American warfare in Indochina and the specific dangers of ecosystem destruction that are posed by high-technology countersurgency warfare, especially if carried on in tropical settings. At the same time it is artificial to ignore altogether our own human concerns, and an orientation toward the subject based on a conception of human ecology seems appropriate, wherein bonds between man and nature provide an essential focus for inquiry. Therefore, we define environmental warfare as including all those weapons and tactics which either intend to

destroy the environment *per se* or disrupt normal relationships between man and nature on a sustained basis. The focus is on environmental warfare as practiced by the United States in Indochina, rather than on the full gamut of weaponry detrimental to environmental values, which would certainly include biological, radiological, and nuclear weapons as well as those discussed here.

We will consider the legal status following weapons and tactics used in Indochina from this perspective :

- 1) The use of herbicides;
- 2) The use of Rome Plows to achieve deforestation;
- 3) Bombardment and artillery fire;
- 4) Reported reliance on weather modification techniques.

1. THE USE OF HERBICIDES

There is extensive information available on the use of herbicides in the Indochina War, principally in South Vietnam⁵. The major chemicals used as military herbicides were Agent Orange (a mixture of 2,4-D and 2, 4, 5-T) used against forest vegetation; Agent White (a mixture of 2, 4-D and Picloram) also used mainly against forest vegetation; Agent Blue (Cacodylic Acid) used against rice and other crops. Defense Department figures disclose a steady escalation in the use of chemical herbicides from 1962 up through the early months of 1968, with a slight tapering off up through the middle of 1969 when the last figures were released. In this period, 4,560,000 acres of forest land and 505,000 acres of crop land were sprayed, the total amounting to 5,065,600 acres, or more than 10 % of the entire area of South Vietnam (see evidence on Cambodia). The rate of application has been roughly thirteen times the dose recommended for domestic use by the U.S. Drug Administration.

President Richard Nixon reportedly terminated the use of herbicides for crop destruction and announced a phase-out of the defoliation efforts in 1970. Defoliation has not been halted by Nixon, but rather the task has been shifted from chemicals to plows, which from an ecological point of view achieve even more disastrous results.

The environmental damage caused by defoliant can still not be fully assessed. However, there is strong evidence to suggest that some varieties of trees in South Vietnam, particularly nipa palms and mangroves, have been destroyed, not merely defoliated, by a single application; multiple applications kill other

⁵ See esp. NEILANDS, J.B., ORIAN, G.H., PFEFFER, E.W., VENNEMMA, A., and WESTING, A.H., *Harvest of Death : Chemical Warfare in Vietnam and Cambodia*, New York (Free Press), 1972; LEWALLEN, J., *Ecology of Devastation : Indochina*, Baltimore, Md. (Penguin), 1971; WHITESIDE, Th., *The Withering Rain : America's Herbicidal Folly*, New York, (Norton), 1971.

trees. The AAAS-HAC study concluded that half of the hardwood trees north and west of Saigon have been damaged. Westing estimates that by December 1970, 35 % of South Vietnam's dense forests had been sprayed; 25 % once, 10 % more than once. Madame Nguyen Thi Binh, speaking in Paris on behalf of the Provisional Revolutionary Government of South Vietnam, alleged that between 1961 and 1969 43 % of arable land and 44 % of forest land had been sprayed at least once and in many cases two, three, or more times. In this process over 1,293,000 persons were « directly contaminated »⁶. John Lewallen concludes : « The forests of South Vietnam have not been merely damaged for decades or centuries to come. Nor have they simply been deprived of rare tree species. It is probable that many areas will experience an ecosystem succession under which forest will be replaced by savanna⁷. » Often elephant grass overwhelms a forest area that has been defoliated to such an extent as to prevent reforestation altogether.

There is ample evidence, then, that military herbicides have been extensively used throughout South Vietnam, especially heavily along rivers, estuaries, on village and base perimeters, and in relation to suspected base areas and supply trails. Defoliants were generally sprayed from the air in specially fitted C-123 cargo planes, often near populated areas and with their dispersal significantly spread beyond intended areas by wind factors. As a consequence, the herbicides contaminated crops, either leading to their destruction or, as the evidence suggests, to teratogenic effects on unborn children. There have been numerous authenticated reports of human and animal poisoning throughout the course of the war.

Military rationale.

The basic military justification for the massive defoliation program was to deny the NLF protective cover, thereby guarding defensive positions against ambush and surprise attack and enabling improved target identification for offensive operations. The destruction of crops was justified as an effort to deny food to NLF forces in areas under their control.

Legal rationale.

The legal rationale of the U.S. Government has been well stated by J. Fred Buzhardt, General Counsel to the Department of Defense, in a letter to Senator J. William Fulbright, dated April 5, 1971:

« Neither the Hague Regulations nor the rules of customary international law applicable to the conduct of war prohibit the use of anti-plant chemicals for defoliation or the destruction of crops, provided that their use against crops

⁶ Madame Nguyen Thi Binh made this statement at the Paris Peace Conference, Feb. 19, 1970 (quoted in WEISSBERG, B., ed., *Ecocide in Indochina*, San Francisco, Calif. (Canfield Press), 1970, p. 19.

⁷ LEWALLEN, J., p. 80.

does not cause such crops as food to be poisoned by direct contact, and such use must not cause unnecessary destruction of enemy property.

The Geneva Protocol of 1925 adds no prohibitions relating either to the use of chemical herbicides or to crop destruction to those above. Bearing in view that neither the legislative history nor the practice of States draw chemical herbicides within its prohibitions, any attempt by the United States to include such agents within the Protocol would be the result of its own policy determination, amounting to a self-denial of the use of weapons. Such a determination is not compelled by the 1907 Hague Regulations, the Geneva Protocol of 1925, or the rules of customary international law⁷. »

In essence, the United States Government claims that no existing rules of international law prohibit the military use of herbicides.

Legal appraisal.

It seems clear that an overwhelming majority of governments regards 1) the Geneva Protocol as binding on non-parties, and 2) as extending its prohibition to cover military herbicides. The protocol is binding because it enjoys the status of customary international law, a status that the United States has not seriously challenged. Indeed, the U.S. Government has argued its adherence to the terms of the Protocol, contending only that its prohibition does not extend to military herbicides (or riot control gasses). In submitting the Protocol to the Senate Foreign Relations Committee for ratification Secretary of State William Rogers provided an accompanying statement which said : « It is the United States' understanding of the protocol that it does not prohibit the use in war of riot-control agents and chemical herbicides⁸. »

Such an understanding of the scope of the Protocol is not shared by the international community as a whole. U.N. General Assembly Resolution 2603A (XXIV) supported by a majority of 80-3 (with 36 abstentions) indicated its express intention to dispel « any uncertainty » as to the scope of the Protocol and contained the following operative paragraph :

« Declares as contrary to the generally recognized rules of international law as embodied in the Geneva Protocol the use in international armed conflicts of any chemical agents of warfare : chemical substances, whether gaseous, liquid, or solid, which might be employed because of their toxic effects on man, animals, or plants. »

This paragraph puts forward a dual basis for disregarding the more restrictive understanding of the Protocol put forward by the American government. First of all, G.A. Resolution 2603A constitutes evidence of what most governments regard the scope of the prohibition to be. Secondly, 2603A is itself supported by a consensus of such a character as to give its law-declaring claims an authoritative status by virtue of the quasi-legislative competence enjoyed by the General Assembly.

⁸ Mr. Rogers' testimony was on March 5, 1971.

This view of the scope of the Geneva Protocol derived from positive international law also accords with the emerging moral consensus and community expectations relating to environmental quality. Hence, when in doubt as to the scope of a treaty rule it seems desirable to seek a determination that accords with unfolding community sentiments. On the level of customary international law, the broad principles of discrimination and proportionality seem at odds with the novel claim to attack vast areas of forest land so as to deprive an adversary of natural cover. It is questionable whether high-technology counter-insurgency warfare waged against a low-technology opponent can ever be reconciled in its basic character with the framework of restraint provided by the four principles of customary international law. In this sense the problems raised by claims to use military herbicides are but part of a larger set of legal concerns.

On balance, it seems possible to conclude that the American use of military herbicides in Indochina violated the Geneva Protocol, which is both a treaty and a standard of prohibition that enjoys the status of customary international law. This assessment of existing law could be confirmed by seeking an Advisory Opinion on the status and scope of the Geneva Protocol from the International Court of Justice. Such an Advisory Opinion is not really necessary, but if, as expected, it confirmed the interpretation of the Protocol embodied in 2603A then it would lay the American contention to rest once and for all.

When it comes to crop destruction the prohibition on military herbicides stands on even stronger legal ground. As Tom Farer points out, such tactics are « at best indiscriminate, and they may in fact discriminate against civilians because, even if the food supply which survives defoliation was distributed evenly, in absolute terms civilians would suffer disproportionately in that there are more of them and many civilians, the young, for instance, have particularly intense needs for certain foods »⁹. Government studies have indeed convincingly shown that crop destruction as an intentional military tactic had the principal effect of reducing the food available to civilians; NLF food requirements were given priority in areas under their control and were small enough in relation to available food to be satisfied. A former high official in the so-called pacification program in Vietnam, L. Craig Johnstone, put the effects of crop destruction as follows : « In the course of investigations of the program in Saigon and in the provinces of Vietnam, I found that the program was having much more profound effects on civilian noncombatants than on the enemy. Evaluations sponsored by a number of official and unofficial agencies have all concluded that a very high percentage of all the food destroyed under the crop destruction program had been destined for civilian, not military use. The program had its greatest effects on the enemy-controlled civilian populations

⁹ FARER, T.J., « The Laws of War 25 Years After Nuremberg », *International Conciliation*, No. 583, May 1971, p. 20.

of central and northern South Vietnam. In Vietnam the crop destruction program created widespread misery and many refugees¹⁰. » Of course, such effects on the civilian population are evidently a central ingredient of counterinsurgent strategy vis-à-vis the countryside, and as crop destruction is fully consistent with such war policies aimed at refugee generation and pacification as « free-fire zones », « harassment and interdiction » artillery fire, forcible removal of refugees, and « search and destroy » missions. The use of chemical herbicides to destroy crops destined for civilian consumption is one of the points where the allegations of ecocide merge with allegations of genocide.

2. USE OF ROME PLOWS AND BULLDOZING EQUIPMENT

A second major form of warfare waged directly against the environment has been to clear the land of vegetation by means of systematic plowing. According to Paul R. Ehrlich and John P. Holdren :

« Perhaps the crudest tool the United States is using to destroy the ecology in Indochina is the "Rome plow". This is a heavily armored D7E caterpillar bulldozer with a 2.5 ton blade. The Rome plow can cut a swath through the heaviest forest. It has been used to clear several hundred yards on each side of all main roads in South Vietnam. In mid-1971 five land clearing companies were at work, each with some thirty plows, mowing down Vietnamese forests. By then some 800,000 acres had been cleared and the cleaning was continued at a rate of about 2,000 acres (3 square miles) daily¹¹. »

Pfeiffer and Westing conclude that by 1971 Rome plowing « had apparently replaced the use of herbicides to deny forest cover and sanctuary to the other side ». They conclude the Rome plowing is more effective than chemicals and « is probably more destructive of the environment ». This tactic has been used to « scrape clean the remaining few areas of the Boi Loi Woods northwest of Saigon ». Pfeiffer and Westing visited an area of forest that had been plowed several years previously and it was covered with cogon grass which, according to these experts, makes « further successional stages to the original hardwood forest very unlikely »¹². It is clear that such plowing inflicts ecological damage that may last for a very long period of time, perhaps permanently.

Legal rationale.

As far as I am aware, no attempt has been made to defend Rome plowing as a legitimate tactic of war. A defense of this practice, if attempted, would undoubtedly rest on the argument that it is a legitimate military objective to

¹⁰ JOHNSTONE, « Ecocide and the Geneva Protocol », *Foreign Affairs*, vol. 49, pp. 711-720, at 719.

¹¹ « Ecocide in Indochina » (mimeo. paper), Dec. 1971, p. 2.

¹² WESTING, A.H., and PFEIFFER, E.W., « The Cratering of Indochina », *Scientific American*, vol. 226, May 1972, pp. 26-29, at 26-28.

deny the enemy protective cover and that, in any event, no rules of prohibition can be discovered in either Treaty or customary international law.

Legal appraisal.

All of the law of war was drafted and evolved in a pre-ecological frame of mind. There are no standards or rules that contemplated a military strategy that sought to destroy the environment as such. Article 22 of the Annex to the Hague Convention on Land Warfare could be relevant in interpreting present content : « the right of belligerents to adopt means of injuring the enemy is not unlimited. » The United States Supreme Court often interprets Constitutional norms as embracing conduct not contemplated at the time of ratification, but reflecting an evolving sense of limits within the world community.

Nevertheless, I think it is not easy to conclude that Rome plowing, however much it offends ecological consciousness, constitutes a violation of existing standards of international law. It points up the need for the formulation of clear standards of prohibition, in a new Protocol on Environmental Warfare (Annex 2).

Finally, it is possible to view such environmental devastation as an instance of « a crime against humanity » in the Nuremberg sense, suggesting again the quasi-legislative potentialities created in a situation of moral outrage. The link between environmental destruction of the Vietnamese forests and crimes against humanity is by way of « human ecology », the environment being inter-related in organic fashion with human existence.

Indeed there is some relatively hard evidence to support such an inference. In the official history of the U.N. War Crimes Commission there is the following report :

« During the final months of its existence the Committee was asked in a Polish case (Commission No. 7150) to determine whether ten Germans, all of whom had been heads of various Departments in the Forestry Administration in Poland during the German occupation (1939-1944), could be listed as *war criminals on a charge of pillaging* Polish public property. It was alleged that the accused in their official capacities caused the wholesale cutting of Polish timber to an extent far in excess of what was necessary to preserve the timber resources of the country, with a loss to the Polish nation of the sum of 6,525,000,000 zloty. It was pointed out that the Germans, who had been among the first as a nation to foster scientific forestry, had entered Poland and wilfully felled the Polish forests *without the least regard to the basis principles of forestry*. The Polish representative presented a copy of a circular signed by Goering under date of 25th January, 1940, in which were laid down principles for a policy of *ruthless exploitation of Polish forestry*. It was decided by the Committee that *prima facie* existence of a war crime had been shown and nine of the officials charged were listed as accused war criminals¹³. »

¹³ *History of the U.N. War Crimes Commission and the Development of the Laws of War*, London, 1948, p. 496 (emphasis added).

3. BOMBARDMENT AND ARTILLERY FIRE

Pfeiffer and Westing have usefully summarized the general information available :

« In the seven years between 1965 and 1971 the U.S. military forces exploded 26 billion pounds (13 million tons) of munitions in Indochina, half from the air and half from weapons on the ground... For the people as a whole it represents an average of 142 pounds of explosive per acre of land and 584 pounds per person... most of the bombardment was concentrated in time (within the years from 1967 on) and in area. Of the 26 billion pounds, 21 billion were exploded within South Vietnam, one billion in North Vietnam, and 2,6 billion in Southern Laos¹⁴. »

These awesome statistics will be further augmented by the escalation of bombing in 1972 to the highest levels of the war. Unlike categories I and II practices, category III practices are not designed, *per se*, to destroy the environment. The element of intentionality is probably absent, although with the accumulation of experience the environmental consequence of bombing patterns becomes part of what is known by the war planners.

On the basis of the evidence available it is clear that several distinct patterns of ordinance use should be separately considered for purposes of legal analysis :

Craterization.

Pfeiffer and Westing estimate 26 million craters, covering an area of 423,000 acres, and representing a displacement of about 3.4 billion cubic yards of earth. Much of the cratering has been caused by 500 pound bombs dropped from high altitude B-52 flights and from large artillery shells. Such a bomb typically produces a crater that is thirty to forty feet wide and five to twenty feet deep (depending on topographical conditions), although larger craters have been reported. The effects of craters are numerous :

- 1) arable and timber land are withdrawn from use virtually indefinitely¹⁵;
- 2) unexploded bombs or fragments make neighboring land unsatisfactory for normal use and cause injury to man and animals;
- 3) craters that penetrate the water table become breeding grounds for mosquitos, increasing the incidence of malaria and dengue fever;
- 4) craters displace soil, and especially in hilly areas accentuate soil runoff and erosion, causing laterization of the land in and around craters;
- 5) bombardment of forest areas has harmed the timber industry by outright destruction; also, metal shards weaken trees and make them vulnerable to fungus infection.

¹⁴ WESTING, A.H., and PFEIFFER, E.W., p. 21.

¹⁵ Same 24.

Legal rationale.

The bombardment involves legitimate bombardment of suspected concentrations of enemy troops or supplies. Environmental damage is an unintended side-effect that is not regulated in any way by existing international law. To the extent the bombing is indiscriminate then it is subject to independent attack. The demonstration of environmental damage adds little to the legal analysis of the status of Indochina bombing patterns.

Legal appraisal.

It is true that no explicit rules of prohibition seem available to assess the legal status of craterization. However, the scale and magnitude of bombardment raises special issues under Article 22 of the Annex to the Hague Convention on Land Warfare and in relation to Crimes Against Humanity as specified at Nuremberg.

It does seem desirable, nevertheless, to seek new legal rules and principles that are explicitly concerned with the environmental side-effects of standard war policies. Also it is necessary in this context to regard belligerent action beyond the capacity of the environment to absorb and respond in a short period of time as involving the independent crime of ecocide.

Would a Nuremberg II tribunal convened to assess liability of American leaders for craterization in Indochina convict on this count? It is difficult to predict the outcome on this issue because the law is murky and because of an apparent absence of a direct intent to destroy the environment on the part of American civilian and military leaders.

« Daisy-cutters ».

Gigantic bombs, weighing 15,000 pounds, were being dropped at an estimated rate of two per week since mid-1971 in South Vietnam to establish instant clearings for firebase helicopter landing areas, and, according to some accounts, on areas of suspected troop concentrations. These bombs kill all animals and people who happen to be within a quarter-mile radius of the blast. The cleared area is completely deforested.

Legal rationale.

Bombing and damage incidental to valid military purpose in a context where no rule of prohibition exists.

Legal appraisal.

The specific action does not seem to violate positive norms of international law. Condemnation is partly an expression of outrage in relation to overall devastation of Indochina and partly an expression of an emerging ecological consciousness. Again, the legal retroactivity of prohibition in a Nuremberg II

setting would be more than offset by a sense that such bombs are indiscriminate in effect and disrupt in fundamental fashion man's links to the environment.

Electronic battlefield; systematic bombing; « free-fire zones ».

In these settings bombing patterns are indiscriminate with respect to all that breathes and moves. The saturation bombing also devastates the land and tends to depopulate the area subject to attack. Fred Branfman has described in agonizing detail the total destruction of the idyllic and prosperous agricultural subsociety of 50,000 in the Plaine des Jarres in Laos¹⁶.

Legal rationale.

There is none. The facts have been officially repressed or distorted by the U.S. Government.

Legal appraisal.

To the extent these war policies involve attacks on civilian targets, such as rural villages, they are clearly in violation of international law. To the extent that the separate acts of environmental destruction are considered the legal status is, at present, more problematic. To the extent that an inhabited ecosystem, such as the Plaine des Jarres, is devastated by direct action, then it seems to be a crime against humanity in the spirit of Nuremberg I.

4. WEATHER MODIFICATION¹⁷

There is an increasing indication that the United States has seeded clouds over Laos in order to increase rainfall. The military rationale for such a tactic is to muddy or cause flooding in the vicinity of the network of roadways constituting the Ho Chi Minh trail. A cloud-seeding plane like a reconnaissance plane that drops flares could accomplish its mission by dropping 35 to 100 pounds of silver iodine over a six-hour period. The Defense Department has shrouded the subject in secrecy and has refused to make any statements of unequivocal denial or confirmation. Nevertheless, a series of collateral accounts, including some references in the Pentagon Papers and some leaked information appearing on March 18, 1971, in a news column by Jack Anderson create a strong basis for believing that weather modification has been used in Indochina as a deliberate weapon of war.

Such tactics, because of their relative covertness and widespread potential for devastating impacts on a target area (and, perhaps, on global weather

¹⁶ BRANFMAN, F., ed., *Voices from the Plain of Jars*, New York (Harper Colophon), 1972.

¹⁷ This section relies upon SHAPLEY, D., « Rainmaking : Rumored Use Over Laos Alarms Arms Experts, Scientist », *Science*, vol. 176, June 16, 1972, pp. 1216-1220.

patterns as well) pose a danger of great magnitude to the future of world order. It seems very important to arouse public concern at this time and seek a clearcut prohibition on weather modification for military purposes¹⁸.

Because of the secrecy surrounding the activity and its novelty in the history of warfare, it is virtually impossible to carry legal analysis any further at this stage. Even more so than poison gas and bacteriological weapons, weather modification poses dangers of indiscriminate and uncontrollable damage, clearly a menacing genie that needs to be recaptured and confined for all time. It seems mandatory in such circumstances to seek an absolute legal prohibition on the practice of weather modification for military purposes.

V

On the basis of this brief description of the legal status of the main elements of environmental warfare in Indochina it seems clear that there are two distinct sets of tasks :

1) To take steps to strengthen and clarify international law with respect to the prohibition of weapons and tactics that inflict environmental damage, and designate as a distinct crime those cumulative war effects that do not merely disrupt, but substantially and irreversibly destroy a distinct ecosystem.

2) To take steps to stop and rectify the ecological devastation of Indochina, to censure the United States for these actions, to impose upon the United States a minimum burden of making available ample resources to permit ecological rehabilitation to the extent possible in the shortest time and in the most humane manner, and to assess fully the various ecological effects of the war upon Indochina.

To accomplish 1) we suggest the following action, illustrated by draft instruments :

- A Proposed International Convention on the Crime of Ecocide (Annex 1);
- A Draft Protocol on Environmental Warfare (Annex 2);
- A Draft Petition, to be signed by individuals and non-governmental organizations, addressed to the Secretary General of the United Nations (Annex 3).

To deal with the more specific problems generated by the Indochina War we propose the following :

- A Draft Peoples Petition of Redress on Ecocide and Environmental Warfare addressed to governments and to the United Nations (Annex 4).

¹⁸ Senator Claiborne Pell « strongly believes » that clouds in North Vietnam have been seeded since 1966, and may have caused thousands of deaths by provoking devastating floods. See *New York Times*, June 27, 1972, p. 12. This belief is reinforced by the connection between rainmaking and confirmed reports that dikes and sluice gates have been bombed.

VI

There are special difficulties that pertain to taking appropriate legal action with respect to environmental devastation in Indochina. First of all, the United States as a preeminent state in the world system is able to block serious inquiry into this subject-matter. I believe this obstructive capability accounted for the failure to inscribe the issue of environmental warfare on the agenda of the U.N. Conference on the Human Environment. Secondly, and relatedly, the United Nations is not able to pursue effective initiatives without the assenting participation of its most powerful Members, especially the United States; the silence of the Organization through a decade of warfare in Indochina is a shocking revelation of the extent to which the Charter is a dead letter whenever its violation is primarily attributable to one of the two superpowers. Thirdly, the United States has not lost the Indochina War in the way in which Germany lost World War II, and as such, its leaders and policies are unlikely to be subjected to critical review by either an independent commission of inquiry or by an intergovernmental tribunal of judgment.

Given these realities, it is necessary to develop an action plan that has some prospect for success. This plan will have to discount the possibilities of relying upon governments or inter-government organizations, although governments that are willing to formulate a critical response, as did Premier Olaf Palme at the Stockholm Conference in June, 1972, help greatly to expose the failure of public institutions to protect public values. Similarly, petitions seeking redress of grievances directed at those institutions entrusted with formal responsibility help to expose institutional responses that sustain or acquiesce in the practice of environmental warfare and ecocide. Such efforts to present petitions emphasize the need to stimulate a world populist movement, both nationally and internationally, as a way of eroding the power of governments over lives and ecological destinies.

The most important arenas of action may be non-governmental in character. At some point it may even be desirable to organize a peoples' commission of inquiry and redress that seeks to focus the facts of environmental devastation and ecocide on Indochina, and to formulate appropriate demands for censure and relief.

On a more fundamental level, the issues of environmental warfare are peculiarly resistant to inter-governmental collaboration because of their apparent link with counterinsurgency warfare. It is the counterinsurgent that tends to pursue the tactics and rely upon the weapons that do the most damage to the environment. That is, governments have a particular interest in being able to use their technological advantages to neutralize whatever advantages of dispersal and maneuverability are enjoyed by an insurgent. In Indochina this technological and tactical gap has led almost all the serious environmental damage

to have been inflicted by the forces aligned with the incumbent government. It can be argued, in addition, that without military herbicides, Rome plowing, and massive airpower, battlefield outcomes would have been decisively in favor of the insurgent forces. Therefore, it would seem to be the case that environmental devastation is a virtually inevitable byproduct of a sustained campaign of counterinsurgency, especially if carried out in the tropics against insurgent forces enjoying a strong base of popular support; in such circumstances not only must the sea be drained to imperil the fish, but its life-supporting ecology must be destroyed as well. Given the prospect of future insurgent challenges, it is unlikely that governments will be agreeable, at least not without a major populist campaign beforehand, to foreclose by assent to legal prohibitions their military options for counterinsurgent response.

This consideration suggests wider grounds for skepticism as to legal responses. Even in the Third World a large technological gap exists between the weaponry and tactics of the government and that of its internal challengers. Throughout the world most governments are confronted by insurgent challenges and seek to use all effective means to defeat them. The common governmental consensus is abetted by arms sales and transfers which make all governments increasingly dependent on high-technology military establishments. From this dependence, the willingness and capability to wage environmental warfare is almost certain to follow.

It needs to be understood that international law, by and large, continues to reflect the perceived self-interest of governments. Both in terms of formation and implementation international law presupposes reciprocal interests in patterns of voluntary compliance. As such, international law is a consensual system. If these interests do not exist or are not perceived to exist, then it is difficult to generate new law or enforce old law in international affairs. This general comment is peculiarly true for the law of war which raises vital questions of governmental survival. Unlike interstate warfare, the insurgent actor is unrepresented in the international legal order, and the law is likely to be shaped to serve the perceived military interests of governments (i.e. actual and potential counterinsurgents).

Such conclusions reinforce our view that the state system is *inherently incapable* of organizing the defense of the planet against ecological destruction¹⁹. As such, the prospects for ecological protection are intimately linked with the prospects of initiating a world populist movement that incorporates the ecological imperative at the same time that it works to secure equity for all men on earth.

¹⁹ This position is developed in my book *This Endangered Planet : Prospects and Proposals for Human Survival*, New York (Random House), 1971.

ANNEX 1

A PROPOSED INTERNATIONAL CONVENTION ON THE CRIME OF ECOCIDE

The Contracting Parties

acting on the belief that ecocide is a crime under international law, contrary to the spirit and aims of the United Nations, and condemned by peoples and governments of good will throughout the world;

recognizing that we are living in a period of increasing danger of ecological collapse; acknowledging that man has consciously and unconsciously inflicted irreparable damage to the environment in times of war and peace;

being convinced that the pursuit of ecological quality requires international guidelines and procedures for cooperation and enforcement,

Hereby agree :

Article I

The Contracting Parties confirm that ecocide, whether committed in time of peace or in time of war, is a crime under international law which they undertake to prevent and to punish.

Article II

In the present Convention, ecocide means any of the following acts committed with intent to disrupt or destroy, in whole or in part, a human ecosystem :

- a) The use of weapons of mass destruction, whether nuclear, bacteriological, chemical, or other;
- b) The use of chemical herbicides to defoliate and deforest natural forests for military purposes;
- c) The use of bombs and artillery in such quantity, density, or size as to impair the quality of soil or the enhance the prospect of diseases dangerous to human beings, animals, or crops;
- d) The use of bulldozing equipment to destroy large tracts of forest or cropland for military purposes;
- e) The use of techniques designed to increase or decrease rainfall or otherwise modify weather as a weapon of war;
- f) The forcible removal of human beings or animals from their habitual places of habitation to expedite the pursuit of military or industrial objectives.

Article III

The following acts shall be punishable :

- a) Ecocide;
- b) Conspiracy to commit ecocide;
- c) Direct and public incitement to ecocide;
- d) Attempt to commit ecocide;
- e) Complicity in ecocide.

Article IV

Persons committing ecocide as defined in Article II or any of the acts described in Article III shall be punished, at least to the extent of being removed for a period of, years

from any position of leadership or public trust. Constitutionally responsible rulers, public officials, military commanders, or private individuals may all be charged with and convicted of the crimes associated with ecocide as set forth in Article III.

*Article V**

The United Nations shall establish a Commission for the Investigation of Ecocide as soon as this Convention comes into force. This Commission shall be composed of fifteen experts on international law and assisted by a staff conversant with ecology. The principal tasks of the Commission shall be to investigate allegations of ecocide whenever made by governments of States, by the principal officer of any international institution whether or not part of the United Nations Organization, by resolution of the General Assembly or Security Council, or by petition signed by at least 1000 private persons. The Commission shall have power of *subpoena* and to take depositions; all hearings of the Commission shall be open and transcripts of proceedings shall be a matter of public record. If the Commission concludes by majority vote, after investigating the allegations that none of the acts described in Article III has been committed then it shall issue a dismissal of the complaint accompanied by a short statement of reasons. If the Commission concludes, by majority vote, after investigating the allegations that acts within the scope of Article III have been or are being committed then it shall issue a cease and desist order, a statement recommending prosecution or sanction of specific individuals or groups, and a statement of reasons supporting its decision. The Commission shall also recommend whether prosecution proceeds under national, regional, international or *ad hoc* auspices. Regardless of decision minority members of the Commission may attach dissenting or concurring opinions to the majority decision. In the event of a tie vote in the Commission, the Chairman shall cast a second vote. The Commission shall have rule-making capacity to regulate fully its operations to assure full realization of the objectives of this Convention but with due regard for the human rights of individuals as embodied in the United Nations Declaration of Human Rights.

Article VI

The Contracting Parties undertake to enact, in accordance with their respective Constitutions, the necessary legislation to give effect to the provisions of the present Convention and, in particular, to provide effective penalties for persons guilty of ecocide or any of the other acts enumerated in Article III.

Article VII

Persons charged with ecocide or any of the other acts enumerated in Article II shall be tried by a competent tribunal of the State in the territory of which the act was committed, or by such international penal tribunal as may have jurisdiction with respect to those Contracting Parties which shall have accepted its jurisdiction.

Article VIII

Ecocide and the other acts enumerated in Article III shall not be considered as political crimes for the purpose of extradition.

The Contracting Parties pledge themselves in such cases to grant extradition in accordance with their laws and treaties in force.

Article IX

Any Contracting Party may call upon the competent organ of the United Nations to

* Article V may be the most controversial provision in this proposal, and could be either deleted altogether or appended as an optional protocol, to enhance the prospects for ratification of the basic Convention.

take such action under the Charter of the United Nations as they consider appropriate for the prevention and suppression of acts of ecocide or any of the other acts enumerated in Article III.

Article X

Disputes between the Contracting Parties relating to the interpretation, application or fulfillment to the present Convention, including those relating to the responsibility of a State for ecocide or any of the other acts enumerated in Article III, shall be submitted to the International Court of Justice at the request of any of the parties to the dispute.

Article XI

The present Convention, of which the Chinese, English, French, Russian and Spanish texts are equally authentic, shall bear the date of...

Article XII

The present Convention shall be open until... for signature on behalf of any Member of the United Nations and of any non-member State to which an invitation to sign has been addressed by the General Assembly.

The present Convention shall be ratified, and the instruments of ratification shall be deposited with the Secretary-General of the United Nations.

After... the present Convention may be acceded to on behalf of any Member of the United Nations and of any non-member State which has received an invitation as aforesaid.

Instruments of accession shall be deposited with the Secretary-General of the United Nations.

Article XIII

Any Contracting Party may at any time, by notification addressed to the Secretary-General of the United Nations, extend the application of the present Convention to all or any of the territories for the conduct of whose foreign relations that Contracting Party is responsible.

Article XIV

On the day when the first twenty instruments of ratification or accession have been deposited, the Secretary-General shall draw up a *procès-verbal* and transmit a copy of it to each Member of the United Nations and to each of the non-member States contemplated in Article XII.

The present Convention shall come into force on the ninetieth day following the date of deposit of the twentieth instrument of ratification or accession.

Any ratification of accession effected subsequent to the latter date shall become effective on the ninetieth day following the deposit of the instrument of ratification or accession.

Article XV

The present Convention shall remain in effect for a period of ten years from the date of its coming into force.

It shall thereafter remain in force for successive periods of five years for such Contracting Parties as have not denounced it at least six months before the expiration of the current period.

Denunciation shall be effected by a written notification addressed to the Secretary-General of the United Nations.

Article XVI

If, as a result of denunciations the number of Parties to the present Convention should become less than sixteen, the Convention shall cease to be in force as from the date on which the last of these denunciations shall become effective.

Article XVII

A request for the revision of the present Convention may be made at any time by any Contracting Party by means of a notification in writing addressed to the Secretary-General.

The General Assembly shall decide upon the steps, if any, to be taken in respect of such request.

Article XVIII

The Secretary-General of the United Nations shall notify all Members of the United Nations and the non-member States contemplated in Article XII of the following :

- a) Signatures, ratifications and accessions received in accordance with Article XII;
- b) Notifications received in accordance with Article XIII;
- c) The date upon which the present Convention comes into force in accordance with Article XIV;
- d) Denunciations received in accordance with Article XV;
- e) The abrogation of the Convention in accordance with Article XVI;
- f) Notifications received in accordance with Article XVII.

Article XIX

The original of the present Convention shall be deposited in the archives of the United Nations.

A certified copy of the Convention shall be transmitted to all Members of the United Nations and to the non-member States contemplated in Article XII.

Article XX

The present Convention shall be registered by the Secretary-General of the United Nations on the date of its coming into force.

B

Resolution relating to the study by the International Law Commission of the question of an international criminal jurisdiction.

The General Assembly,

Considering that the discussion of the Convention on the Prevention and Punishment of the Crime of Ecocide has raised the question of the desirability and possibility of having persons charged with ecocide tried by a competent international tribunal,

Considering that, in the course of development of the international community, there will be an increasing need of an international judicial organ for the trial of certain crimes under international law,

Invites the International Law Commission to study the desirability and possibility of establishing an international judicial organ for the trial of persons charged with ecocide or other crimes over which jurisdiction will be conferred upon that organ by international conventions;

Requests the International Law Commission in carrying out this task to pay attention to the possibility of establishing a Criminal Chamber of the International Court of Justice.

ANNEX 2

DRAFT PROTOCOL ON ENVIRONMENTAL WARFARE

Considering that environmental warfare has been condemned by public opinion throughout the world and that the deliberate destruction of the environment disrupts the ecological basis of life on earth;

Mindful of the extent to which the future of mankind is linked with the rapid development of protective attitudes toward environmental quality;

Conscious of the extent to which existing and prospective weapons and tactics of warfare, particularly counterinsurgency warfare or reliance on nuclear weapons, disrupt ecological patterns for long periods of time and destroy beneficial relationship between man and nature;

Recalling such prior expressions of collective concern with the general effects of war as expressed in General Assembly Resolutions 1653 (XVI) and 2603A (XXIV);

We, as representatives of governments and as citizens of the world community, do hereby commit ourselves as a matter of conscience and of law to refrain from the use of tactics and weapons of war that inflict irreparable harm to the environment or disrupt fundamental ecological relationships;

This Protocol prohibits in particular :

1. All efforts to defoliate or destroy forests or crops by means of chemicals or bulldozing;
2. Any pattern of bombardment that results in extensive craterization of the land or in deep craters that generate health hazards;
3. Any reliance on weapons of mass destruction of life or any weapons or tactics that are likely to kill or injure large numbers of animals.

We, as undersigned, will seek to gain as many individual and institutional accessions to this Protocol as possible;

The Protocol shall come into effect after the first five signatures and is binding thereafter on all governments of the world because it is a declaration of restraints on warfare that already are embodied in the rules and principles of international law;

Violation of this Protocol shall be deemed an international crime of grave magnitude that can be charged and considered, by fair trial proceedings, wherever an alleged culprit can be apprehended; in cases of extreme necessity trials in absentia are authorized;

Done in Stockholm, Sweden, June, 1972.

ANNEX 3

DRAFT PETITION ON ECOCIDE
AND ENVIRONMENTAL WARFARE

The undersigned

Mindful of their concern with the ecological quality of this planet and with the purposes and principles of the Charter of the United Nations;

Gravely concerned by the evidence of ecological devastation in Indochina and by the spread of counterinsurgency weaponry and doctrine to governments throughout the world;

Fearful of the further willingness of governments to conduct their operations without due deference for the conditions of ecological welfare, especially during periods of armed conflict;

1. *Declare* that

a) The commission of acts of ecocide is an international crime in violation of the spirit, letter and aims of the United Nations and, as such, is in direct violation of the Charter of the United Nations and violates the sense of minimum moral obligation prevailing in the world community;

b) The protection of man's relation to natural ecosystems is a legal, moral obligation deserving of the highest respect and directly related to the prospects for human survival and social development;

c) Any government, organization, group or individual that commits, plans, supports, or advocates ecocide shall be considered as committing an international crime of grave magnitude and as acting contrary to the laws of humanity and in violation of the ecological imperative.

2. *Request* the Secretary-General of the United Nations to take the following steps :

a) Convene an emergency session of the Security Council to order the United States to cease and desist from all war policies responsible for the ecological devastation of Indochina;

b) Compile a report on the ecological damage done in Indochina and urge the establishment of a commission of inquiry composed of experts that would submit periodic reports to the General Assembly of ecological effects of the war on Indochina and courses of action, together with funding, available to secure maximum rehabilitation of ecological quality;

c) Request the International Law Commission to prepare an International Convention on Ecocide, a Protocol on Environmental Warfare, and a Code on individual and collective responsibility relative to the crime of ecocide;

d) Convene a conference of governments during 1974 to take appropriate legal steps to outlaw ecocide and to provide the legal framework needed to prohibit environmental warfare, including principles and procedures to assess responsibility and to enjoin activity destructive of environmental values.

ANNEX 4

PEOPLES PETITION OF REDRESS ON ECOCIDE AND ENVIRONMENTAL WARFARE

The Undersigned

Recognizing that modern weapons of mass destruction are capable of causing widespread and enduring devastation of the human environment;

Concerned by the evidence of long-term, extensive ecological damage caused in Indochina by a variety of weapons including bombs, napalm, herbicides, plows, and poisonous gases used principally and massively by the United States in the course of waging the Indochina War;

And further concerned by reports of the supply and sale of these means of waging war by the United States to other governments including the Saigon administration of South Vietnam and the government of Portugal;

Do hereby petition all governments to renounce weapons and tactics of war designed to inflict damage to the environment as such.

And call especially on the Government of the United States of America to immediately stop the destruction and transfer of weaponry designed primarily to carry on environmental warfare;

And call upon the United Nations to take steps immediately to condemn reliance by the United States on environmental warfare in Indochina, to investigate and report the full extent of ecological damage resulting from the Indochina War; to consider and recommend steps that could be taken to restore the environment in Indochina as rapidly as possible; and to assess responsibility for ecological damage and to call for appropriate reparations from the government(s) responsible after the termination of hostilities;

We further appeal to the United Nations to convene promptly a world conference to draw up an international convention prohibiting recourse to weapons and military tactics designed primarily to destroy or modify the human environment and to prepare a draft convention on Ecocide to parallel the Genocide Convention.