



The EAST-WEST CENTER Honolulu, Hawaii 96822

EAST-WEST POPULATION INSTITUTE

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Dr. McGeorge Bundy, President  
The Ford Foundation  
320 East 43rd Street  
New York, N.Y. 10017

Dear Dr. Bundy:

At the suggestion of Dr. Matthew Meselson I have prepared the enclosed proposal for studies of ecology and society in Viet-Nam. During the past year of my association with the National Academy of Sciences Committee to Assess the Effects of Herbicides in Viet-Nam I have become aware of both the serious nature of the ecological and human problems of this aspect of the war, and of the great difficulties in doing a scientifically respectable and meaningful study of them. Under present political circumstances in American academe, participation in such studies also poses difficult career problems, at least for social scientists.

My misgivings have been balanced by a feeling that there is much to be learned of potentially great humanitarian, practical and scientific importance, and that despite the current feeling of revulsion regarding Viet-Nam, such studies should begin now.

The proposal has been prepared in some haste, and does not include the normal bibliographic references. For this I apologize, and hope that nonetheless the project will merit consideration and support.

Yours truly,

P.K.

Peter Kunstadter  
Senior Fellow

Encl.

cc: Anton Lang, Chairman, NAS Herbicide Committee  
Matthew S. Meselson, Chairman, AAAS Herbicide Assessment Commission

## STUDIES OF ECOLOGY AND SOCIETY IN VIET-NAM

Peter Kunstädter  
University of Washington

This is a proposal to conduct sustained, multi-disciplinary research on selected effects of warfare on the environment and population of Viet-Nam. Two major studies have been conducted or are underway with regard to the effects of herbicides, the AAAS Herbicide Assessment Commission, and the NAS Committee to Assess the Effects of Herbicides in Vietnam. Both of these were conceived as short term, highly specific efforts. Through working with the NAS Committee I have become aware in some detail of the practical difficulties in making studies of this type. I have become convinced that such studies must involve a long term commitment of personnel, must include detailed familiarity with the people and environment of Viet-Nam, must be multi-disciplinary, must deal with several destructive elements rather than being confined to a single one, and must be freed, in so far as possible, from real or implied political constraints. Based on a preliminary search for relevant data and materials, I feel that there is no quick, cheap, or easy way to make the necessary studies. I have found that essential research materials are being lost or destroyed. For these reasons it is appropriate to seek non-governmental funding, to establish the studies in a university setting, rather than under an ad hoc committee, and to proceed immediately without waiting for the political situation to "stabilize". Thus, although it is impossible to establish a firm schedule, it is proposed to begin these studies in the summer of 1972, and to continue to do whatever portions of them that conditions will permit.

The research will be directed at assessing the effects on humans of the use of herbicides, and, in so far as is possible, the effects of other weapons which may have extensive and persistent ecological effects, especially bombing (effects of blast, cratering and fragment damage), and land clearing by means of Rome plowing. It will also attend to basic social changes which have occurred in Viet-Nam during the past 20 years or so, which are directly or indirectly related to the war: large scale movements of population, urbanization, rapid population growth, and increasing monetization of a previously largely peasant and plantation economy. It will also attempt to gather information on decision making processes which surrounded the use of weapons of mass destruction, and, assuming that these decisions were primarily initiated by Americans, the general implications of decisions regarding large scale ecological changes in a technologically oriented society.

The types of data specified for collection in the following outline will be of general utility for a variety of studies, including those on medical ecological effects. These studies are not spelled out in this proposal. Such studies may be conducted either in connection with the NAS Committee (the activities of which are scheduled to terminate in August 1973), or, as it seems unlikely they can be completed by that date, under some other auspices, perhaps as a supplement to the activities proposed here.

Studies to date, and even a casual glance at the landscape or aerial photographs of Viet-Nam clearly show there have been widespread changes in the environment of Viet-Nam. Precise measurement of these changes, interpretation of their persistent effects, and recommendations for remedial action are far more difficult.

Basic to the problem of making precise measurements is the absence, or unavailability in compiled form of fundamental statistical information of adequate accuracy and scope. Thus, many who have begun working on these problems have concluded that it is necessary to begin by describing a detailed

baseline of relevant features of the country on a district or province level: population (distribution by geographical location, age, sex, ethnic characteristics, migration status, educational status, etc.); economy (production and distribution of basic commodities, prices paid to farmers and workers, etc.); landscape (classification and distribution of forest types, land use types); public health (epidemiological characteristics, distribution of morbidity and mortality by cause, age and sex, geographic locality, etc.), and so forth.

Despite the massive outpouring of paper in Viet-Nam, baselines have not been compiled in a way which would make them usable for the detailed, localized studies essential for the understanding of war-related environmental and human changes. No national census has been taken since a sample survey conducted early in the 1960's; agricultural statistics are based on a national survey so that no breakdown of agricultural statistics has been made for any local administrative unit; forest and land use classifications have been made, but in insufficient detail to allow their use in local studies; a national epidemiological service is still in its infancy, with reporting based primarily on hospital records plus a few particular disease-oriented surveillance systems (malaria, plague). Meanwhile, the detailed province and district level reports of AID and other U.S. personnel are reportedly being systematically destroyed (at least in Viet-Nam), as a result of restricted storage space, which limits the institutional memory of U.S. agencies to a single year. Vietnamese province and district statistics remain in province and district offices, and are an as yet untapped resource. It is hoped that these will provide essential data not otherwise available.

General concepts of measurement of environmental and social change are fairly well understood, but their application in a setting as complicated as contemporary Viet-Nam will be difficult. Perhaps the best that can be done is to describe, in detail, present conditions in a sample of areas, attempt to reconstruct past conditions by means of some reliable techniques (for example, interpretation of aerial photographs to describe forest conditions as of some date in the past), and assess change on this basis. Assigning cause to change is increasingly risky, as the effects become more removed in time and in a chain of intervening events. For example, without a controlled experiment or detailed local history, attributing change in value of forest resources to defoliation might neglect changes due to logging operations and changes in logging techniques, due to bombing, due to changes in disease (which might in turn be related to war related damage as injured trees may be more subject to disease), or due to changes in the market for forest products.

Nonetheless, if we take seriously the hypothesis that large scale environmental change may have occurred, with serious and persistent implications for man, then we must begin somewhere. The places to begin seem to me to be:

1. Collection of available documents through a multi-disciplinary bibliographic effort in conventional library resources, administrative files and archives in Saigon, Paris, Washington, and if accessible in province and district offices in Viet-Nam. Materials to be collected include aerial photographs; records of location, date, amount, type of agent used; statistics on climate, agriculture, population, observations of effects of agents on population, agriculture, etc.

2. Interviewing individuals who may have detailed information on relevant topics. These would include: a. local residents of the affected areas and comparable unaffected areas; b. Vietnamese officials directly concerned with problems associated with presumed effects (refugee, resettlement, agriculture, forestry,

public health, war damage claims); c. Vietnamese officials concerned with decisions related to use of weapons such as defoliants; d. U.S. officials directly concerned with problems of presumed effects (counterparts to b.); e. U.S. officials concerned with decisions to use weapons such as defoliants (counterparts of c.). Materials to be collected include recollections (and documents) reporting human and environmental conditions in particular identifiable areas prior to the application of destructive agents, conditions at the time the agents were applied, and changes since the application of the agents. At the same time information would be collected on local histories to determine other relevant conditions and changes (introduction of new crop plants and agricultural techniques, changes in transportation and marketing, changes in land tenure, etc.). A systematic attempt would be made to collect information from areas in which destructive agents were used, and in environmentally and socially comparable areas where they were not applied.

It is obviously impractical at the moment to conduct interviews with residents of many of the affected areas, however it should be possible to interview officials in Saigon, and in at least a significant number of provincial capitals, and to find American officials who are now in the U.S. who have direct and personal knowledge of the sorts required.

3. On this basis a tabulation will be made of characteristics of vegetation, land use, human population, economic activities and so forth, which can then be related to distribution of the destructive agents. This will allow, for example, a quantified statement to be made about the total areas affected by different types of agents, the acreage of rice fields, plantations, forest, mangrove, etc. which were sprayed, the probable number of persons living within some specified distance of spray sites, or probably dependent on resources within the sprayed area, etc. This fundamental tabulation has not yet been made, although some of the materials necessary for it are being gathered by the NAS committee. Such a tabulation will be essential for rational sampling of the effects of specific agents in specific environments, as well as an assessment of the overall effects.

Attempts to make this tabulation are probably best thought of as a series of better and better approximations, improving as the quality of the data improves. A tabulation of type of agent and forest types can be made now, but the sources of information (a forest map at scale 1:1,000,000 and computerized records of spray flight paths) have not yet been checked for errors, although they are known to contain some errors. These basic data sources must be checked for reliability, for example by comparing the forest type map against samples of the 1958 aerial photographs on which it was based, and by comparing flight line records against observable effects in aerial photos taken before and after the defoliation missions. Photo analysis is being done under NAS sponsorship, in the School of Forest Resources at the University of Washington, but baseline information on land use, human population, etc. has not yet been obtained.

4. Field studies must be conducted to relate aerial photographs and statistical reports to conditions "on the ground". It is not now practical to conduct intensive field research in Viet-Nam, but certain kinds of fieldwork are clearly required and can be planned in some detail. Some studies may be carried out in nearby countries with comparable environments, both for the purpose of gathering useful baseline information, and for refining techniques for making such studies when they can be done in Viet-Nam.

Several research strategies are available and may be appropriate for different aspects of the study:

- a. comparison of directly affected and presumably unaffected areas of similar environmental and population characteristics. Selection of possible research sites will be aided by completion of the tabulation mentioned above in no. 3.
- b. Retrospective comparison of past conditions in an affected area with conditions in the same area prior to application of the agent.
- c. Prospective longitudinal studies in areas presumed to have been affected,

as compared with areas to which the agents were not applied.

d. Detailed examination of areas known to have been affected, in search for residual evidence of the agent, and continuing effects of the agent (e.g., persistence of herbicide in the soil; present ecological condition of bomb craters which did not exist previously, and which might harbor malarial mosquitos, or might be beneficially used for fish ponds; numbers of shell fragments present, and their effects on otherwise merchantable lumber).

5. The characteristics of Viet-Nam's environment and society have changed radically in the past 20 to 30 years, and some of these changes have been independent of specific war-related actions. For example, rapid urbanization has changed the public health conditions, and would have done so regardless of environmental effects of herbicides and bombs. The increased monetization of the Vietnamese economy can be expected to have affected types of crops grown, and their methods of distribution, which will in turn have affected land use, land tenure, and soil conditions. Modernization of agriculture has included the introduction of chemical fertilizers as well as herbicides, which may have widespread ecological effects. Dams recently completed upstream on the Mekong tributaries may have affected patterns of water flow and influenced the breeding of certain fish species, again completely independent of the effects of herbicides (which have been alleged to have influenced fish production). Population increase can be expected to have resulted in increased pressure on the land, at least in some localities, independent of removal of portions of the land from cultivation due to bombing or herbiciding. Modernization may have resulted in use of kerosene and falling demand for charcoal, independent of the destruction of charcoal resources in the mangrove areas. There is no way to separate out such postulated effects without detailed localized knowledge.

Thus, for reasons suggested above, any interpretation of the effects of specific destructive agents must be based on an understanding of the environment of Viet-Nam and of processes of social change in Viet-Nam. Suggestions for rehabilitation must also take these factors into account. An inherent part of this project will be to develop a better understanding of recent changes in Viet-Nam, many of which (despite the war) resemble those occurring in other developing countries. One way of establishing this understanding is through intensive collection of local histories. This will be done first in the form of case studies, and eventually, as conditions permit, and as the tabulation of basic data is completed, in a systematic survey of the nation.

#### Proposed Activities and Institutional Arrangements

Three sorts of activities have been outlined above: tabulation of available records and information, systematic collection of bibliography, and field research to collect baseline statistical and historical information. The NAS committee has already been active in the first two, and will apparently intensify its activities in these areas. This proposal requests support for the field studies for several reasons. First, because these will undoubtedly have to continue beyond the life span of the NAS committee. Second, because I feel the fieldwork has a better chance of being conducted in whatever political conditions exist in the future in Viet-Nam if it has independent, non-government support, and a clear non-governmental institutional base. Independence is also important in recruiting social scientists to participate in these studies (see for example the reviews of "The Thailand Case", and discussions of the history of the NAS Herbicide Committee in the American Anthropological Association Newsletter during the past two years).

Liaison with the NAS Committee will be essential because of the need to use some of the same basic data sources. I believe this can easily be worked out as long as I maintain my relationship with the NAS Committee, by reaching an agreement regarding use of privileged information available to the NAS Committee. This information is not to be released until the Committee's report is issued in August 1973.

Official recognition and courtesies must be sought from appropriate Vietnamese and U.S. government agencies, perhaps along the lines of those accorded to correspondents. Nonetheless the study must proceed independently from official agencies, and must be clearly recognized as non-classified, scholarly activity.

The project should be housed in a university. I have held preliminary discussions with officials of the University of Washington concerning a project dealing with contemporary Viet-Nam, and have received an enthusiastic and sympathetic hearing. (I have talked with the Dean of Arts and Sciences, the incoming Director of the Institute for Comparative and Foreign Area Studies, and the Dean of the College of Forest Resources, who is a member of the NAS Committee). The details of the relationship of the project to the university will have to be worked out in further discussions, depending on the availability of funds.

It is essential to tie the activities of this project to Vietnamese institutions, both to insure that information vital to the future of Viet-Nam is made available in Viet-Nam, and because it is essential to have the active collaboration of Vietnamese in many phases of the project. Under normal circumstances it might be appropriate to establish a working relationship with one or more Vietnamese universities, but this now seems impossible due to the recent imposition of martial law and closure of all universities. Thus I anticipate that individual Vietnamese scholars and students will be approached to participate in the studies.

#### Personnel

Personnel already committed to long term association with this project include myself, A. Terry Rambo, and Neil Jamieson (c.v.'s attached). Rambo has just completed his doctoral dissertation comparing social systems of North and South Viet-Nam for the Department of Anthropology, University of Hawaii. Jamieson is an entering graduate student in the department, and is completing a book on modern Vietnamese literature. Both Rambo and Jamieson have had extensive field experience in Viet-Nam. They have been collaborating recently on developing methods for the study of local history in the Mekong Delta, and both may act as short term consultants to the NAS committee. I have had four years anthropological field research experience in Thailand, including studies of social structure, agriculture, ecology, health, and demography. During the course of these studies I have had collaborative working arrangements with foresters, botanists, soil scientists, doctors, medical ecologists and geographers.

#### Outline of Activities

1. Trip to Viet-Nam and Thailand, summer 1972
  - a. establish working relationships with Vietnamese scholars and institutions.
  - b. plan in detail the search for province and village statistics and histories in Viet-Nam.
  - c. conduct pilot studies in one or two provinces close to Saigon.
  - d. train team to conduct similar studies in other accessible provinces.  
(Personnel: Kunstadter 3-4 weeks, Rambo 4-6 weeks, Jamieson 4-6 weeks, one or two others to be hired)
  - e. inspect mangrove area in Thailand, probably Chanthaburi Province, where mangrove productivity will be studied by Thai graduate student, Faculty of Forestry, Kasetsart University, Bangkok.
  - f. plan in detail the study of mangrove economics.
  - g. search for local literature and potential research sites in Thailand for studies of forest productivity in other forest types. Surveys of forest biomass have been made in the past, these sites may be restudied after a known period of years to measure annual productivity. The results of this study may allow construction of an estimate of loss of productivity by species as a result of defoliation.

- (Kunstadter 4 weeks, in collaboration with Dr. James Bethel, Dean, School of Forest Resources, University of Washington and member of NAS Herbicide Committee, and Dr. Sanga Sabhasri, Dean, Faculty of Forestry, Kasetsart University).
2. Trip to Viet-Nam and Thailand, winter 1972-73
    - a. follow up on tasks outlined under 1.a-g., in Viet-Nam and Thailand.
    - b. assess feasibility for detailed hamlet or village-level studies in Viet-Nam to collect data essential as baseline for economic, demographic, genetic, medical-ecological studies. If feasible, these will start as soon as possible, with attempts to locate appropriate sample study sites, plan and conduct pilot studies, train teams to do the studies in sample villages. (Kunstadter 4 weeks or more, depending on conditions in the field)
  3. Trip to Viet-Nam and Thailand, summer 1973-74
    - a. follow up on tasks outlined under 1 and 2 in Viet-Nam and Thailand. (Kunstadter 3 months, Rambo 3 months, Jamieson 3 months)
    - b. continue detailed hamlet or village level studies.
    - c. collaborate with specialized economic, demographic, genetic, medical-ecological studies in the selected villages.
  4. At the University of Washington, academic year 1972-73
    - a. collaborate with NAS study in tabulating distribution of herbicides, land use, and human population. (Kunstadter, part time, Rambo, part time, Jamieson, part time, in collaboration with Dr. James Bethel and faculty of School of Forest Resources, University of Washington, one or more research assistants, full time)
  5. Contingencies arising and make-up of materials gathered in Viet-Nam and Thailand. It is impossible to predict conditions in Viet-Nam for this summer. If activities outlined above are infeasible, such portions of them as can be done either in Saigon or in Thailand will be done. Emphasis during the academic year would then be placed on completing the tabulation of herbicides, land use types and human population with whatever information was available, plus search for secondary source materials (e.g., interviews with U.S. officials formerly stationed in Viet-Nam, now in the U.S.).

#### Budget Estimate

##### Salaries

P. Kunstadter, $\frac{1}{2}$ time academic 1972-73; full time summer '73	12,000
A.T. Rambo, $1\frac{1}{2}$ mos summer '72; $\frac{1}{2}$ time ac. '72-73; full time sum. '73	9,000
N. Jamieson, $1\frac{1}{2}$ mos summer '72; $\frac{1}{2}$ time ac. '72-73, full time sum. '73	6,000
To be named, one or two additional social scientists, 18 man mos.	25,000
Research assistant, 12 mos.	6,000

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 58,000

Personnel benefits, insurance, etc. @ 15% of salaries 8,700

##### Travel

P. Kunstadter, 3 round trips to Viet-Nam, Thailand	3,000
A.T. Rambo, N. Jamieson, to be named, total 6 round trips to V-N	6,000
Local travel in U.S. to confer, collect data	2,000
Local air travel in Viet-Nam	2,500
	<hr/> 13,500

##### Personnel Hired Overseas

Research assistants, 36 man months @ \$300	10,800
Secretary (Vietnamese) 16 months @ \$300	4,800
Driver 16 months @ \$200	3,200
Thai graduate student 6 months @ \$300	1,800
	<hr/> 20,600

##### Travel expenses or per diem

24 man months @ \$20 per day	<hr/> 14,600
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Office rent in Viet-Nam 15 months @ \$200	<u>3,000</u>
Car rental in Viet-Nam 15 months @ \$300	<u>4,500</u>
Supplies and equipment Xerox rental, IBM equipment rental, cameras, tape recorders, fuel for car, paper supplies, communications	<u>5,000</u>
Overhead (to be negotiated with University of Washington)	<u>?</u>
Total	<u>\$127,900</u> plus overhead

Postscript

Planning and budgeting for this project has stopped with the end of the summer of 1973. This is insufficient time to accomplish the general tasks outlined above. Proper studies will require more time, but it is unrealistic to design such a program of studies now. Longer range planning may be possible by January 1973, at which time a revised plan and budget will be submitted.

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