Written testimony submitted by Professor Donald Roberts to the House of Representatives Energy and Power Subcommittee Hearing: "Climate Science and EPA's Greenhouse Gas Regulations." March 8th, 2011, 10am.

I want to thank the House Energy and Power Subcommittee for the opportunity to speak today. It is an honor to address such a distinguished body of U.S. Representatives.

Introduction

I have given public testimony before and want to begin my comments with an observation from past appearances in hearings. It seems to me those duly selected to represent our citizens seek nothing more from those who testify than truthful and, hopefully, unbiased assessments on the issues of our times. I see this in the microcosm of my wife's elected duties as Vice Mayor of Clifton Forge, VA. While there are magnitudes of difference in responsibilities she has versus the weighty responsibilities you ladies and gentlemen of the U.S. House of Representatives carry, the fundamental need for truth and facts is the same. It has been my experience however, instead of truth and facts, and more often than not, you get carefully crafted and highly qualified assessments representing one ideological perspective or another.

In this context, I want you to know I am a retired research scientist. My opinions do not represent those of my previous employer, the Department of Defense, or the U.S. Government. I am not salaried or funded for my work. I have no active research program that requires my allegiance to some ideological perspective for future funding. Likewise, no corporate interests or nongovernmental group with an ideological agenda pay for my work. This is not to say, however, that I am without convictions. My promise to you is that I can document the truth of my statements. For me, to a considerable extent truth is what is demonstrable, replicable, and consistent across studies.

Science, Climate and Disease

I am here today because I follow closely the evolving debate on claims of public health harm from climate change. My previous testimony in the US Senate[1] on this topic remains relevant and I will not repeat those arguments here, nor will I repeat the excellent scholarship of scientists such as Dr. Paul Reiter who have published so ably on the topic of climate change and insect-borne diseases[2]. This

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[1] Testimony by Prof. Donald Roberts, Senate Committee on Environment and Public Works, Hearing, "Examining the Human Health Impacts of Global Warming," October 23, 2007, Available at: http://epw.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore_id=10a2d911-9404-4145-bfa4-6f5c105ad287

[2] Reiter, Paul, "Climate Change and Mosquito Borne Disease," *Environ Health Perspect*, **109**, Suppl. 1, March 2001.

topic interests me because of parallels in EPA and environmental advocate's claims about climate change and CO_2 regulatory controls and their claims about insecticides and human health. The arguments for government interventions in both topic areas rest on fearful claims, doomsday and fearful predictions of devastating consequences in absence of regulatory intervention. Consider the following statements from a recent Senate hearing:

> "If Congress slashed EPA's funding, concentrations of harmful pollution would increase from current levels," Jackson told the Senate Environment and Public Works Committee yesterday. "The result would be more asthma attacks, more missed school and work days, more heart attacks, more cancer cases, more premature deaths."[3]

The assumptions underlying these predictions are many. One outstanding assumption of this message of fear is that EPA regulations measurably reduce indices of asthma and heart attacks, and cancer and premature deaths. I have reviewed the history of the EPA budget. It has gone up and down during its 41-year history. I know of no increased pollution during years of low budgets. Likewise I know of no marked reductions of asthma, cancer of other health indices during years of budget increases. Jackson's claims are typical fear tactics that have become a hallmark of the environmental movement.

Putting issues of EPA budget aside, I want to introduce my technical comments with a quote from a recent Associated Press article with a lead statement "none of EPA's actions is as controversial as its rules on global warming."[4] In my opinion, this is wrong.

Almost forty years ago EPA banned DDT in the United States. Its action against DDT was extraordinarily controversial, and still is. As activists advanced fearful claims against DDT, the EPA was warned, over and over again, a ban would destroy critically important disease control programs and millions upon millions of poor people in developing countries would die as consequence. Leaders of the World Health and Pan American Health Organizations, and even the U.S. Surgeon

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[3] Kim Chipman and Jim Snyder - EPA Carbon Rules Would Be Blocked Under U.S. Bill Readied by Republicans. Bloomberg. Mar 3, 2011 12:00 AM ET (http://www.bloomberg.com/news/2011-03-02/epa-chief-jackson-urges-u-s-lawmaker-not-to-slash-her-agency-s-funding.html)

[4] DINA CAPPIELLO, 4 Dems join GOP fight to block EPA climate rules, Associated Press – Thu Mar 3, 8:12 pm ET (http://news.yahoo.com/s/ap/us_epa_global_warming)

> Full context of the quote is: None of the EPA's actions is as controversial as its rules on global warming, which Republicans and some Democrats say will raise energy costs and cause job losses in an already fragile economy. The Obama administration counters that controlling global warming pollution is necessary based on scientific evidence that it is threatening public health and the environment. The EPA also says the rules will ultimately yield more health and economic benefits than costs, much like many other Clean Air Act regulations.

General warned against the ban. The EPA banned DDT anyway, and the doomsday predictions of those public health leaders proved prescient[5].

Today, we are engulfed in controversy whether EPA should be allowed to regulate our energy industry on basis of its ideological agenda. Repeatedly we have heard their messages of fear, yet most people oppose government intrusions that risk higher costs of energy or loss of jobs in the energy sector. Perhaps a take home message for our environmentalist colleagues is 'people are tired of the fear tactics.' Regardless, the national debate continues and the EPA and others continue to focus on messages of fear and misinformation to achieve their goals. On the international level, the environmental sector, headed by the United Nations Environment Programme (UNEP), is working for global elimination of DDT by 2020. As with our national energy debate, fear tactics and ideological zeal characterize UNEP's work. Again, as with our national debate, UNEP's work and determination to achieve DDT elimination by 2020 starkly pits the needs of hundreds of millions of poor people in developing countries against an ideological agenda. As I will explain below, UNEP shows scant regard for people living in poor countries at risk from insect-borne diseases in its march toward another environmental victory.

Some in this room will be incensed by my characterization of UNEP's actions against DDT or EPA's actions to regulate the energy industry as ideological. I use the term because EPA was warned over and over again that a DDT ban would sentence untold millions to death and disease. EPA banned DDT for most uses anyway. The impact of this decision on global disease control was devastating and is still being felt today. In the current debate, government is being warned yet again not to enact regulatory controls. Putting aside those warnings is a function of ideology, and it goes far beyond what science can justify or defend, particularly in this time of high unemployment and a troubled economy. The unintended consequences of a major ideological agenda can be devastating.

Climate Change and Asthma

Practically every facet of what I describe in research and advocacy against insecticides has a counterpart in climate change research and advocacy. For purposes of illustrating some counterparts in climate science, I will focus attention on a recent paper currently receiving a lot of attention on climate change and asthma[6]. I have reviewed the paper and offer no serious criticisms. Authors present estimates of time for beginning of the seasonal pollen season (aeroallergen season) and time it ends with the first frost, so the data really are not measures of warming since changes do not provide a measure of actual warming, just changes in

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[5] Further details can be found in Donald Roberts & Richard Tren, The Excellent Powder, DDT's Political and Scientific History, Dog Ear Publishing, IN, April 2010, pp 452

[6] Ziska, L., Kowlton, K., Rogers, C., et. al., "Recent warming by latitude associated with increased length of ragweed pollen season in central North America," *Proc Nat Acad Sci*, Feb 22, 2011, doi: 10.1073/pnas.1014107108

beginning and ending of the pollen season. I will leave it to subject matter experts to deal with any technical issues in this paper. I will restrict my deliberations to those of a lay reader.

The paper suggests numbers of days of aeroallergen seasons might be extended in northern latitudes as a consequence of seasonal changes. To some this might suggest authors have documented warming temperatures as the cause of those changes. Warming temperatures might or might not be involved, I don't know; but authors only present data on the beginning and end of the aeroallergen season by latitude and day of year. The authors fail to point out that the range of confidence intervals were greatest in the more northern and more southern latitudes. This means there should be least confidence in estimates for length of aeroallergen seasons at those latitudes than in mid-level latitudes. The data also show aeroallergen seasons became shorter in southern latitudes, but still range of confidence intervals were larger for the extreme latitudes, thus there were less accurate. Although authors discuss their data in context of surface temperatures and warming, they actually present no data on surface temperatures and degree of actual warming (unless it is included in the supporting information, which I have not examined). The only way I can explain this is that authors consider measurements of first and last days of the aeroallergen season as reliable surrogates for actual warming as might be measured by continuous recordings of surface temperatures. Personally, I am not at all convinced one is an accurate surrogate for the other. No data are presented on whether lengthening of the aeroallergen season increases numbers of asthma cases and the authors do not claim it does.

Authors were appropriately careful about that; but the reason for caution is the incidence of asthma is actually greater in the Northeast and Midwest and less in the south. The logical conclusion from the north-south distributions of asthma cases is warm temperatures and long aeroallergen seasons are not major determinants for incidence of asthma cases.[7] If this interpretation is correct, then it is not easy to understand what the exact significance of their findings really is. In brief, I think the point is this; at some latitudes under some seasonal weather conditions, the allergy season will be longer in other years and, over time, the season may actually increase in length. Yet, the data in this report do not constitute an observation on a long-term climate change trend—and I don't think the authors claim otherwise. In fact, I think the scientists have shown an appropriate level of care in their interpretations and conclusions.

As I have emphasized in this written testimony, I am interested in parallels in messages of fear by ideological campaigns against DDT and those for regulating $C0_2$ emissions. On the DDT issue, it was always the receptivity of popular media to any and all reports of potential harms from DDT exposures that brought about public

[7] CDC. Akinbami, L.J., et al., Asthma Prevalence, Health Care Use, and Mortality: United States, 2005–2009 National Health Statistics Report. January 12, 2011. (http://www.cdc.gov/nchs/data/nhsr/nhsr032.pdf).

fear of the insecticide. That fear persists and is continually exacerbated by media coverage, even today. In my review of this paper I see a similar receptivity of the popular press. Consider that one article about this paper actually infers the work suggests global warming is spurring asthma[8] (does this mean it is causing an increase in numbers of cases? How else can this headline be interpreted?). That report was picked up and repeated on the website stopglobalwarming.org.[9] Nevertheless, brief check on the Internet and other sources will show broad, high-visibility coverage of this rather modest paper. Such coverage is out of context because the paper does not describe a long-term trend (it covers few years), it is not definitive, it requires replication, and the findings must eventually be proven as consistent across multiple studies. In other words, it is just a preliminary report, which suggests some possible associations, nothing more. It is not the last word on this subject.

In this paper, it is worth noting that the paper lists twenty authors. It was published in Proceedings of the National Academy of Sciences. Of the twenty authors, five are affiliated with major environmental science programs. The first author is with the Crop Systems and Global Change Laboratory of the USDA in Beltsville, Maryland. The second author is with the Health and Environment Program of the Natural Resources Defense Council. Later authors are mostly affiliated with asthma centers throughout the U.S. One author, Johnathan Patz, is known for attempts to attribute increasing rates of dengue and malaria to global warming. Of the authors, more than one, e.g., Knowlton, Ziska, and Patz, seem firmly or loosely associated with the NRDC. The NRDC is an activist organization that has a long history of campaigning against DDT and for reductions of CO_2 emissions.

Those who zealously campaign to reduce CO_2 emissions have long recognized a need to establish climate change as a source of harm to public health. Climate change as a threat to public health is, after all, the ultimate message of fear. This need is reflected in the many attempts to attribute all sorts of increases in malaria, dengue and other diseases to global warming. As documented in the DDT story, scientists and other public health professionals engaged in the control of those devastating diseases already know the tragic consequences of allowing misrepresentations in science to fester and grow, unchallenged by professionals within the discipline. As a consequence, attempts by climate change advocates to link those diseases to global warming have been effectively rebutted. The truth is, the range and intensities of those diseases are under control of many complex and dominant factors, such as the conditions of human poverty and man's own efforts to control them. The bitter truth about malaria and dengue in the Americas is the increases are largely products of environmental campaigns to stop the use of public health insecticides.

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[8] Naik, G. Wall Street Journal 3may2007. Global warming may be spurring allergy, asthma. (http://www.mindfully.org/Air/2007/Warming-Allergy-Asthma3may07.htm)

[9] http://www.stopglobalwarming.org/news/global-warming-may-be-spurring-allergy-asthma/

Unintended Consequences: Environmentalism and Insect-borne diseases

A stark example of an unintended consequence relates to the catastrophic harm caused by the ideological war waged against DDT. A close look at options for controlling dengue virus infections (an insect-borne disease also known a break bone fever and, in some cases, life threatening dengue hemorrhagic fever) will show even the causal observer the disease is currently out of control. A closer look will show we have few options for effective preventive measures for reducing disease rates. Dengue is ranked as a global pandemic and is rampant in humid tropical regions of the Americas. For example, in 2010,

> Brazil recorded 999,688 cases of dengue in 2010, more than triple of last year cases, while deaths totaled 572, more than double in 2009, according to figures released Monday.[10]

But this devastating burden of disease was not always there. I lived and conducted research in Brazil through most of the 1970s. There were no cases of dengue because populations of the mosquito responsible for the disease had been eradicated in the 1950s and 1960s and Brazil was dengue-free. There were rare mosquito re-infestations, but public health teams quickly eliminated them with a magical tool, DDT. A re-infestation occurred while I was there in the mid-1970s, but this time the Brazilians did not mount an effective response. In that time frame, similar re-infestations were occurring in other countries. By the mid-1970s the efforts to deal with new infestations were being ramped down. The reason had nothing to do with the EPA had, it was due to fear tactics anti-DDT campaigners had employed in years before the EPA came into existence.

The United States had signed an international agreement to use DDT to eradicate *Aedes aegypti*, the vector of dengue and yellow fever. In 1964 Congress funded the eradication program. Then in 1969, an Executive Order was signed to stop all domestic uses of DDT. *Aedes aegypti* just happens to be a mosquito tied to the domestic environment--so that was that! The 1969 action against DDT was driven by ideology, not science. The U.S. abandoned its eradication program the same year. Prominent tropical medicine specialists protested, but to no avail. At that point other countries knew their own programs would inevitably fail because the U.S. was a major trading partner, so importations of the mosquito would be a continuous problem. Thus, by the mid-1970s, eradication programs of the Americas began to collapse and the mosquito began its inexorable return to all its old haunts in Central and South America.

Once dengue-free countries of Central and South America continue to experience increasing numbers of dengue infections each year. Since those increases can loosely be correlated with some warming of temperatures, climate

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[10] Brazil, dengue cases on the rise. Posted March 1, 2011. Latin America. Current Events and News (http://latinamericacurrentevents.com/brazil-dengue-cases-rise/)

change advocates have claimed the increases are due to warming temperatures.[11] Their claims ignore the historical record of why dengue is there, how current trends reflect a continuum of the mosquito re-occupying a vast geographical range, how outbreaks are dependent on human introductions of different dengue viruses, and ignore how those tropical climates have always been broadly supportive of enormous increases in the disease regardless of any small changes in ambient temperatures. In the end, it is man's control efforts or lack of control efforts that are determinants of dengue outbreaks, not the hyped changes in temperature and rainfall.

I have used this example to demonstrate real-world damage of messages of fear from environmental campaigns. As noted above, in 2010 Brazil suffered a burden of one million cases of dengue and hundreds of deaths. The United States just went through a major scare with swine flu, our total count of cases for 2009-2010 was about 42,000.[12] Just imagine if there had been a million cases. Further imagine the infections would be continuing and a million or more would occur every year. That burden of disease is what Brazil faces with dengue fever, and their problem is, at least in part, an unintended consequence of an old regulatory action. The 1969 decision against DDT constituted a disastrous rush to judgment. The judgment was based on messages of fear; it was political and not scientifically justified.

Perhaps some in this room may not know the EPA actually came into existence as a vehicle to enact a ban on DDT, and other insecticides. The ban was hailed by the anti-insecticide campaign as a great victory and it solidified EPA's ideological agenda for decades to come. To achieve a ban, the EPA Administrator set aside the scientific evidence from months of scientific hearings. Likewise, the Administrator set aside the presiding judge's carefully considered opinion that, based on sworn scientific testimony, a ban was not warranted. Two months later the Administrator signed the ban. The ban was EPA's first major regulatory action and the decision was entirely political. To this day, the EPA has never been compelled to present scientific evidence justifying the Administrator's decision. The EPA continues an international activist agenda against DDT and against national malaria control programs that need DDT to protect life and health of vulnerable populations. As evidence of this, I am attaching in the Annex a document showing direct financial contributions of US and EPA funds to the Stockholm Convention for elimination of persistent organic pollutants which includes special activities for DDT elimination.

Although I will return to this subject later, for now I want to sum up comments about EPA's actions against DDT in the following way:

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[11] Valente, M. Climate change fuels spread of dengue fever. March 19, 2007. Inter Press Service Journalism and Communication for Global Change. (http://ipsnews.net/news.asp?idnews=36994)

[12] CDC. 2009 H1N1 flue U.S. situation update. (http://www.cdc.gov/h1n1flu/updates/us/)

From decades of study and debate, it is my firm conviction the ideological foundations of the EPA rest on the graves of millions of babies, children and pregnant women living at risk from disease in poor, malaria endemic countries. The victims died as a consequence of fear tactics of environmental campaigns and of EPA's ban on DDT and its continuing national and international advocacy against that insecticide.

Contributions of Science to Campaigns of Fear

Messages of fear are a key component of environmental campaigns, and it is useful to examine how science contributes to those messages.

Funding for research shapes science. Levels of funding set the stage for growth, stagnation, or decline of a scientific community. Steady and substantial research funding for a given area of enquiry promotes the growth of the scientific discipline. Additionally, continuous and adequate funding gives time for growth of ideological leanings within a science community. These simple concepts are important for understanding rapid growth in claims about the significance of climate change, especially as it relates to public health.

I was an active researcher in the 1980s, during years when there were increasing funds being made available for global warming/public health research. I was lured by the prospect of new funding opportunities and began conducting research into possible impact of warming temperatures on malaria. I compiled some rather large data sets and I started examining relationships between climate and malaria. I soon discovered that those large data sets equipped me to find almost any correlation or statistical association I wanted. I was alarmed and dug deeper. I found actual determinants for changes in malaria incidence were not changes in climate, but changes in what governments were doing to control the disease. This was true for both positive and negative directions of disease incidence. I abandoned those enquiries but my record of publications and professional presentations reflects that brief time of flirting with the global warming subject. In fact, those initial enquiries eventually led to a paper I published in Emerging Infectious Diseases in 1993, which laid out the relationships I am referring to.

Since the 1980s the flow of funding into the subject area of linkages between global warming (now known as climate change) and public health has changed from a trickle to an ongoing flash flood of money. For this reason, expect no diminution in frequency of claims or of decreases in the messaging of fear.

All too often fear messaging has its roots in misrepresentations of science in peer-reviewed literature, so it is worthwhile contemplating how misrepresentations find their way into that literature. In the 1960s and 1970s there were many instances of misrepresentations of DDT science. Many pro-DDT scientists protested; but most did not. However, the real imbalance in the flow of information during those years was not from scientists failing to correct the scientific record, the

imbalance was in the popular press' full-hearted receptivity to messages of DDT being a dangerous poison. To a very significant extent, the same sort of biased messaging occurs in current struggles over scary claims about climate change. With DDT, the popular media embraced the messages of fear even though billions of people had been heavily exposed to DDT, to include millions in the U.S., without any documentation or demonstration of meaningful harm.

False "facts," erroneous data, flawed analyses, and biased interpretations are present in every discipline of science. All too often scientists do not purposefully work to expose the falsehoods that clutter scientific thinking. Understanding such failings in the process of science is important to understanding why the anti-insecticide campaigns and why current campaigns over regulatory control of CO_2 often get strong media coverage, with none going to those who blow the whistle over misrepresentations of science.

People reasonably expect scientists to have integrity and to be honest in published work. Yet, the task of enforcing truth in published papers is nobody's responsibility. As a consequence, dishonest papers are not rare. Even more common, however, are highly biased publications with ideological motives. Opposed to a dishonest paper with knowingly fraudulent data, analyses, or interpretations, a paper with ideological motivations presents the author's beliefs opposed to an unbiased and objective analysis of research. In science, the only defense against fraudulent and highly biased papers is the peer-review process. Unfortunately, that too can be manipulated and often falls short. Yet, peer-review is the gold standard. Research presented in any other venue will not really count as validated and peer-reviewed discovery.

Although unfortunate, it is a fact, many scientists do not bother to refute or even respond to false or highly biased publications. This, as expressed in the following quote, leaves the modern process of discovery wanting:

> "If we do not penalize false statements in error, we open up the way, don't you see, for false statements by intention. And of course a false statement of fact, made deliberately, is the most serious crime a scientist can commit. (Snow, 1934, p. 273)"[13]

More often than not, respondents who do write comments and objections to problems in published research do so in defense of their own studies.

The reason the science community is so seemingly tolerant of misrepresentations of science is because of the highly competitive nature of research. Ultimately, the first priority of a research scientist is his or her own research, not policing the literature. Most scientists are fully engaged in the process of discovery. If successful in their pursuit they receive the personal benefits of peer recognition (perhaps even public recognition) plus a professional benefit of

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[13] Claus, G., Bolander, J. 1977. *Ecological sanity*. David McKay Company, Inc., New York. 592pp (page 478).

improved chances for more research support and other forms of career advancement. Failure in their quest will do just the opposite. There is almost no reward for exposing malfeasance of fellow scientists. To the contrary, false and biased reports are a great and wasteful distraction. Even more unfortunate is that within this milieu of problems one finds perhaps the biggest problem of all. This problem revolves around those scientists who opt for a shortcut to success. The shortcut is created by existence of well-funded ideological agendas.

Research data, analyses, and interpretations that can be used to advantage of an ideological agenda will be grabbed by activists within the movement and will be trumpeted in blogs, websites, and the popular press. It is precisely at this point that the popular press becomes a pivotal player in deciding what elements of discovery are presented to the public. Thus, what bloggers and the popular press will or will not write about is critically important. And as the history of struggles to preserve DDT for malaria reveals, the fear tactics and heavy funding of anti-DDT campaigns enjoy much more receptivity than do scientists who object to false and biased reports. After all, it is the scary story that seems to win. So scientists who get support from an ideological movement and get their research promoted in the popular press can enjoy quick recognition and rapid career progression. It seems fair to conclude, other than in cases of stupidity or incompetence, there can be rewards for misrepresentations of science. The rewards of shaping ones paper according to dictates of ideology are perhaps the single best explanation for what is happening today in climate change science.

I have tried to identify some pitfalls of research involved in what can be identified as strong ideological agendas. However, none of my views here should be taken as an inference I want cuts in research funding. I don't. However, I think there are huge inequities and those inequities fast track us toward harmful public policy decisions. Let me frame this issue first with comments about the anti-insecticides ideology. We have 40 years of anti-DDT campaigning. As a consequence, disease control programs stalled and some were completely stopped. Those programs were highly effective, so when they were stalled or stopped the diseases came roaring back. I have already described what happened with dengue in the Americas. Over time, but in the background to those devastating developments, the scientific community underwent huge growth in funded research to show potential links between DDT (or other insecticides) and every conceivable sort of harm. Furthermore, this growth in funded research is a global phenomenon. On the flip side of this issue, research funding for discovery of new insecticides declined and is almost non-existent today, especially for new public health insecticides. These facts define a huge problem. Billions spent to find any possible link between insecticides and harm to human health, millions in propaganda to demonize insecticides, and millions more to advocate against their use; but almost nothing for discovery of a true DDT replacement. This inequity has a history of almost 40 years and its cost can be calculated in millions and millions of human deaths.

Contemporary and Historic Lessons

I have explored and explained the important parallels between climate change activism and activism against public health insecticides. Though the EPA's decision to ban DDT for most uses was taken nearly 40 years ago, the battle to preserve this life-saving chemical for malaria control continues today. As we hold this hearing, the attempts of some malarial countries to source, import and use DDT are being thwarted by global environmental agencies and ongoing anti-insecticides activism.

As Annexes to this testimony, I have included copies of an opinion piece by Namibia's Minister of Health, Dr. Richard Nchabi Kamwi and a newspaper interview with Guyana's Minister of Health, Dr. Leslie Ramsammy. Both these Ministers of Health explain in their respective pieces that their malaria control programs require DDT and that global attempts to limit access will undermine their efforts to save lives.

Dr. Kamwi writes:

> Public-health insecticides save lives just as medicines or vaccines do. If there were coordinated campaigns against life-saving medicines, there would be a global outcry. Unfortunately because of the stigma associated with insecticides and DDT in particular, we are often left to defend these life-saving chemicals alone. If we are to achieve our goals of malaria elimination though, we are going to need a more robust and global effort to defend the tools we need to get there.[14]

Dr. Ramsammy is quoted as follows:

> "Guyana would only need about two to thee tonnes of DDT annually for a few years to completely eliminate malaria...there is only one company and it will not produce that small amount for Guyana and even then if they did how would it get around the regulations surrounding the shipping restrictions...virtually there is a ban on DDT,"[15]

More recently, Dr. Ramsammy stated:

> "I support the non-use of DDT for agricultural purposes but not the elimination as a vector control chemical and I would say that until I die. I don't believe we have any justification in terms of the number of deaths globally and the morbidity due to these diseases,"[16]

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[14] Kamwi, R.N. "Free the fight against malaria," Wall Street Journal Europe, Nov. 8, 2010
[15] Narine, V, "The knock-out punch," Guyana Chronicle Online, Jan 20, 2011
[16] Knews, "Health Minister Calls for use of DDT to fight vectors," Kaiteur News Online, March 7, 2011.

As Ministers of Health, both Drs Kamwi and Ramsammy are responsible for the health and welfare of the citizens of their countries. Based on the overwhelming scientific evidence of safety and effectiveness, these Ministers have concluded that DDT should be used. However lives in their countries are being endangered not because of the use of man-made chemicals, but by the lack of man-made chemicals. What I describe here is a triumph of fear-based activism over science and reason. Ultimately, as I describe below, it is a triumph of environmental bureaucracies over the lives of poor people in poor countries.

I attach in the Annex a research paper that I co-authored and which was recently published in the peer-reviewed journal *Research and Reports in Tropical Medicine*. This paper describes the way the UN Environment Program and its financial mechanism, the Global Environment Facility (GEF) along with environmental health units of the Pan American Health Organization (PAHO) and World Health Organization (WHO) misrepresented and manipulated malaria control data. These data manipulations, which could just as accurately be described as scientific malfeasance, were undertaken so as to attempt to prove that malaria control is possible without public health insecticides. Those of us who are experts in tropical public health know that malaria cannot be controlled without the use of public health insecticides, like DDT. At a cost of around $14 million, UNEP and GEF ran experiments in Mexico and seven Central American countries to try to prove that malaria could be controlled with interventions they describe as 'environmentally sound.' These 'sound' interventions included screening houses, planting trees around houses and clearing potential breeding sites.

As with most scientific experiments, UNEP and GEF set up demonstration areas where their interventions would be used and control areas where there would be no interventions. As my research paper describes, at the end of the UNEP/GEF experiments there was no difference in malaria rates between the demonstration areas and the controls. The 'environmentally sound' interventions achieved nothing. Interestingly, malaria cases as a whole were reduced, though not through any of the UNEP/GEF interventions, rather through widespread use of malaria medicines as part of ongoing Ministry of Health programs. UNEP and GEF claimed the reductions in malaria rates were a result of their project, instead of reporting they were due to the widespread use of malaria treatments (a form of malaria control known as pharmacosuppression).

I have included this example in my testimony as just one example of how the UN's lead environmental program has misled the public and has manipulated data for the singular goal of removing DDT from use in malaria control programs. UNEP cannot claim to know that its agenda will not cost lives. Scientists such as myself and many others, to include Ministers of Health, are on public record explaining this to UNEP officials on numerous occasions and in different venues. Yet UNEP is pressing ahead with its agenda and it has the power to do so. It has the power to do

so because we have given UNEP this power and regrettably the United States continues to fund its work (as documented in the Annex).

I hope that this example will give the US House of Representatives occasion to pause and seriously consider the long-term consequences of handing greater powers over to the EPA, particularly if it is under the guise of improving human health and wellbeing. I suggest to you that all the great advances and improvement in air and water quality for which this agency might rightfully take credit, on balance, pale in comparison to the enormous devastation and loss of life, perhaps as unintended or perhaps as intended consequences, this agency caused by its political actions against DDT and the agency's continuous advocacy to prevent use of DDT in disease control programs. I am of the opinion that no further funding or authority should be allocated to the EPA without a thorough public audit of past decisions and rulings, beginning with their ruling on DDT.

Conclusion

As I have explained, my area of expertise is in tropical public health. However as a scientist and as a taxpayer, I have to question the political agenda behind highlighting the effect of climate change on asthma. If we are to accept that climate change will worsen asthma, the question that arises is what should we do about it? How are we to improve the health and welfare of those suffering from asthma? The whole body of asthma science points to conditions of poverty being a dominant risk factor for asthma.

If we are going to seriously try and reduce asthma as a public health problem, then our first goal should be to improve our economy and, to the maximum extent possible, try to eliminate conditions of poverty. I believe we are fundamentally mistaken if we believe for one minute that greater EPA control over CO_2 will make the slightest difference to asthma sufferers. In fact I believe that with greater EPA control over CO_2, it is likely that economic growth will suffer and we will be poorer as a nation. I have observed in my many years of scientific research, in both rich and poor countries, the rich countries can afford to deal with public health problems. Let us disabuse ourselves of the idea, if it is out there, that EPA controlling CO_2 will improve health outcomes in the US or elsewhere. I fear, based on outcomes of past EPA decisions, that greater EPA control over our lives and economy could indeed worsen our health outcomes, and most assuredly worsen or economy.

ANNEX 1

1. Stockholm Convention Financial Report – UNEP/POPS/COP.5/34. Page 13
2. Kamwi, Richard Nchabi, "Free the Fight Against Malaria," Wall Street Journal Europe, November 8, 2010
3. The 'Knock-Out' Punch, Vanessa Narine | 20 Jan 2011, Guyana Chronicle Online
4. Health Minister calls for use of DDT to fight vectors 07 Mar 2011 Kaieteur News Online

UNITED NATIONS

UNEP/POPS/COP.5/34

Stockholm Convention on Persistent Organic Pollutants

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Conference of the Parties to the Stockholm Convention on Persistent Organic Pollutants
Fifth meeting

Geneva, 25–29 April 2011
Item 6 of the provisional agenda*
Programme of work and adoption of the budget

Financial report and review of the staffing situation in the Secretariat

Country	*Pledge*	*Payment*	*Remarks*
Contributions 2010			
CORSA, Mexico	800	800	PEN magazine
Germany	EUR 30 000	37 890	Technical assistance on new POPs in Nigeria
LITO S.A., Colombia	1 500	1 500	PEN magazine
Netherlands	EUR 40 000	53 600	POPs activities 2010
Netherlands	EUR 40 000	34 264	POPs activities 2010-2011
Netherlands	EUR 120 000	116 336	POPs activities 2010-2011
Norway	NKr 2 900 000	447 531	Technical assistance projects for 2010
Norway	NKr 170 000	26 984	Travel support to developing countries
Sweden (KEMI)	SKr 1 000 000	68 681	GMP project (1st instalment)
Sweden (KEMI)	SKr 660 000	90 659	Alternatives to DDT
United States Environmental Protection Agency	10 000	10 000	International public health pesticides workshop
Subtotal 2010		***888 246***	
Total income		**9 500 621**	
Committed pledges during 2010 (not deposited)			
India		1 000	Launch of Global Alliance for alternatives to DDT
European Community grant		27 200	Toolkit activities (final) (EUR 20,000)
Germany		65 000	Synergy projects between Stockholm and Rotterdam conventions (EUR 50,000); deposit
Norway		192 800	Small-grant projects with Basel, Rotterdam and Stockholm convention regional centres (NKr 1,130,000)
Norway		22 200	Safe Planet Campaign (NKr 130,000)
Sweden		22 200	POPRC-6 participant travel (SKr 150,000)
Trédi International, France		8 000	Launch of PCBs Elimination Network
United States		400 000	Support for POPs activities
Total pledges		**738 400**	

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Monday, November 8, 2010

Free the Fight Against Malaria

By Richard Nchabi Kamwi

This week southern African countries commemorate Malaria Week, with events to increase awareness of a disease that continues to claim lives and stunt development in Africa, Asia and Latin America. Coincidentally, and perhaps ironically, an expert committee convened by the Stockholm Convention on Persistent Organic Pollutants is also meeting this week, in Geneva, to discuss dichlorodiphenyltrichloroethane or DDT, an anti-malaria insecticide that has been saving lives since 1945. The Geneva meeting, thousands of miles from any malaria-spreading mosquito, could have important implications for disease control and development in poor countries.

Namibia is a party to the Stockholm Convention, which laudably seeks to remove harmful pollutants from the environment. As DDT is essential for malaria control, it is the only chemical classified as a "persistent organic pollutant" that can still be used. Yet my country and others working to eradicate malaria still face ongoing pressure from anti-insecticide activists, and in recent years the manufacturers of DDT have dwindled to only one, a state-owned factory in India. Regrettably the secretariat of the Stockholm Convention envisages halting all production of DDT in just seven years. Yet there is no true replacement for DDT, and malaria-inflicted countries will continue to need it for the foreseeable future.

Malaria is a disease that we should not have to live with, and happily most developed nations eradicated it in the 1950s, mostly thanks to the targeted use of DDT.

Namibia together with seven countries in the Southern African Development Community has been designated for malaria elimination over the coming five years. As part of a phased intervention to roll back malaria from the south to the north, Namibia, Botswana, South Africa and Swaziland are on track to eliminate the disease by building a comprehensive, evidence-based approach that includes using bednets, improving diagnosis, and making available safe, effective treatment. But the cornerstone of this highly successful campaign is the spraying of small amounts of insecticide, including DDT, inside houses.

There are several reasons to defend DDT and ensure we have ongoing supplies. First, DDT is safe for humans and the environment. Since the 1940s thousands of scientific studies have investigated potential harm to human health from DDT. Almost all these studies are weak, inconclusive or contradictory; in other words there is no evidence of harm. On the other hand there is well-documented evidence of its great public-health benefits. As Minister of Health, I have to evaluate the full body of scientific evidence and balance risks. With regard to DDT and malaria, any rational balancing of risks will favor DDT.

As for the environment, DDT produces no environmental contamination when sprayed in small quantities inside. Yet even if there were some concerns about environmental harm, we would still place greater value on human life.

Second, DDT is essential for managing insecticide resistance. There are few alternative insecticides suitable for malaria control and approved by the World Health Organization. None equal the efficacy of DDT nor do they work in the same way as DDT, which primarily stops mosquitoes from even entering houses. The well-documented experience of a number of countries in southern Africa is instructive in this regard. For example, South Africa in 1995 switched from DDT to deltamethrine, a pyrethroid. But the malaria-carrying *Anopheles funestus* mosquito proved resistant to deltamethrine early on, and the resultant increases in fatalities due to malaria necessitated the reintroduction of DDT, which continues to be used.

Third, failing to protect DDT, secure supplies and defend our right to use it will mean that the global community puts the sensibilities of anti-insecticide activists and the agendas of the Stockholm Convention Secretariat ahead of the lives of poor people in malarial countries. This will set a worrying and damaging precedent and would be grossly unjust.

> *Stop putting the sensibilities of anti-insecticide activists ahead of human lives.*

In general, ministries of health work with limited budgets and have many competing demands. Public-health insecticides save lives just as medicines or vaccines do. If there were coordinated campaigns against life-saving medicines, there would be a global outcry. Unfortunately because of the stigma associated with insecticides and DDT in particular, we are often left to defend these life-saving chemicals alone. If we are to achieve our goals of malaria elimination though, we are going to need a more robust and global effort to defend the tools we need to get there.

I have long labored to control this complex and challenging disease in Namibia. My staff understands the strengths and weakness of different malaria-control methods. Drawing on this knowledge and experience, I call on the international community to act against those who seek to eliminate or restrict our freedom to use DDT. First and foremost, we must protect the health and welfare of those who are at risk of disease and death from malaria.

Mr. Kamwi is the minister of Heath and Social Services in Namibia and chairperson of the South African Development Community's Malaria Elimination Eight (E8) group of countries.

The 'Knock-Out' Punch

Vanessa Narine | 20 Jan 2011

Guyana Chronicle Online

In the last 20 years there have been at least 20 million deaths because of malaria, one million deaths annually, and 250 million cases of fever cause by malaria each year across the globe.

Last year alone the world saw a new picture - globally over 800 million cases of malaria were recorded and in Guyana alone the incidence of malaria climbed to 17,000 cases.

While locally this was a decrease from the 100,000 cases seen in the 1990's, it was an increase from 2009's 10,000 cases.It is in this context that Health Minister Dr. Leslie Ramsammy contends that Guyana - and the world over - needs the 'knock out punch' to eliminate the malaria scourge that plagues the health sector.

Guyana needs DDT (dichlorodiphenyltrichloroethane).

"Unlike in the 50's and the 60's we do not have the knock out punch we need...we have been making progress in reducing malaria yes, but we can never have complete elimination without DDT," he said.

Ramsammy said using alternative methods to address malaria will only "stagger" an opponent, which has the potential to return stronger and deadlier to inflict major losses on a country - tragically too that loss includes the loss of lives in the millions.

Past Success

In the 1940's malaria was rampant, particularly on the coast, at which time DDT was introduced by an Italian Doctor George Giglioli.

He first headed the Demerara Bauxite Company, Ltd., a subsidiary of the Aluminum Company of America (ALCOA).

The company offered medical services to its employees and the surrounding population through a hospital in Mackenzie, Region 10 (Upper Demerara/ Berbice) and Giglioli was integrally involved in the delivery of these services.

In his autobiography, 'Demerara Doctor: Confessions and Reminiscences of a Self-Taught Physician', Giglioli noted that malaria proved a much more intractable problem, compared to other diseases.

According to the book, between 50 and 75 per cent of all those who sought treatment at the hospital were suffering from malaria in the 1940's.

"The mosquitoes that carried the disease bred prolifically around Mackenzie following the May-July rainy season; there was no practical way to get rid of them or their breeding ponds. The only way to control the disease was through a prolonged course of the unpopular, bitter-tasting drug quinine," the book read.

In 1936, he was asked by Booker's, the country's largest sugar producer, to head a laboratory in Georgetown the company was setting up to conduct systematic medical surveys and improve health conditions on all the sugar estates in the country.

"This was exactly the kind of development I had hoped for when I accepted the job with Davsons," he wrote.

In 1939, another malaria milestone was achieved: a Malaria Research Unit was established with funds from the Colonial Government, the Rockefeller Foundation, and the British Guiana Sugar Producers' Association, and Dr. Giglioli was selected to head it.

Giglioli came to be recognised as a valuable a resource and in August 1942 he obliged to accept the appointment of Government Malariologist.

The following year, three distinguished British scientists made an unscheduled visit to Guyana when their flight from Trinidad to Washington, D.C., was delayed for several days.

One of the scientists, Dr. Alexander King, talked about the new insecticide DDT, which the Allies (in the Second World War) were using as a 'secret weapon' to protect their troops from malaria.

A month later, the first 500-pound consignment was on its way to Guyana. The preliminary work needed for the field experiment, Giglioli's detailed mosquito and malaria surveys, had already been done.

The trials expanded into a large-scale control program in 1946 and into a countrywide campaign in 1947.

By 1951, malaria and its principal carrier had been completely eliminated from the coastal areas, including Georgetown, by means of a highly focused house spraying campaign.

In the interior, where settlements were widely scattered and difficult to get to, it was impossible to completely eliminate the disease. The mosquito lived in the forest there, not in houses.

To date there is no malaria on Guyana's coastal plains, as is the situation in the

Caribbean, most parts of the US, Europe and parts of Asia, among other territories. This work was also promoted by the late Janet Jagan who served as Health Minister. Ramsammy noted that when the People's Progressive Party lost power in 1964, it handed over a country where there was no malaria on the coast.

"This was one of the legacies of the administration under Dr. Cheddi Jagan...when we emerged into independence the PPP gave a country over that had no malaria," the Health Minister said.

However, with time and change, DDT's continued use was not to be.

In 1962, American biologist Rachel Carson wrote Silent Spring. The book cataloged the environmental impacts of indiscriminate DDT use in the United States of America (USA) and questioned the logic of releasing large amounts of chemicals into the environment without fully understanding their effects on the environment or human health. The book suggested that DDT and other pesticides cause cancer and that their agricultural use was a threat to wildlife, particularly birds.

The book produced a large public outcry that led to a 1972 ban in the US and the use of DDT was subsequently banned.

Under the Stockholm Convention on Persistent Organic Pollutants (POPs), which are chemicals capable of affecting human health and the environment far away from the regions where they are used and released, the production and use of DDT in vector control is 'restricted'.

Review

However, the Health Minister made it clear that while a 'ban' on DDT is not implicitly stated, a ban virtually exists because of the regulations governing, in particular, its production and shipping.

He pointed out that there is currently only one producer of DDT, a company in India which only produces based on relatively large demands.

"Guyana would only need about two to thee tonnes of DDT annually for a few years to completely eliminate malaria...there is only one company and it will not produce that small amount for Guyana and even then if they did how would it get around the regulations surrounding the shipping restrictions...virtually there is a ban on DDT," Ramsammy said.

To this end, he called for a review of the perceptions surrounding the use of DDT, pointing out that the non-use of DDT was based on the effects its use had in the agricultural sector - since DDT had a dual purpose, for agriculture and for

vector control.

The Health Minister noted that there is not sound evidence which indicates that DDT as a vector control method is a hazard.

"There is no evidence that DDT in vector control led to mass deaths," Ramsammy posited.

He agreed that the use of DDT in the agricultural sector will have negative impacts; that the positives will outweigh the benefits and indicated his support for this position. "There is no one doubting that we should not use DDT in agriculture," the Health Minister said, "We are not talking about using it in the fields where it will get into the water and foods. We are talking about protection from mosquitoes."

However, Ramsammy stressed that in the agriculture sector there are affordable and accessible alternatives which can be used, for example gramoxzone.

He noted that chemicals like gramoxzone do not stay in the environment as long as DDT, when used in agriculture, hence is not included in the Stockholm Convention and its use is permitted.

On the other hand though, there are negative impacts of gramoxzone - an absolute prerequisite in agriculture sectors across the world - but over the years methods have been developed to control those effects.

For example, persons handling the chemical must wear certain gear to protect themselves and there is evidence to prove that people's fertility can be affected by gramoxzone.

Ramsammy "It is a balancing act with the negatives and the positives...there can be do doubt that DDT has biological effects and there are no chemicals that are without such effects, whether it is at an environmental level or at an individual level."

DDT - A Different Story

The Health Minister said since the virtual ban on DDT a number of powerful insecticides have been developed, but they are costly and are inaccessible to most populations.

"What we have are very expensive alternatives to DDT...either we make these more affordable or push to have those insecticides that have shown to be extremely effective," he said.

A point for concern, he highlighted is that the current treatments for malaria, in

particular the Pyrethroids, is slowly becoming ineffective, since the mosquitoes are developing a resistance to the drug.

"We have not even reached the stage where we can make one of the alternatives more affordable and it is already showing resistance," Ramsammy said.

The Health Minister stated that for the millions that are dying and the losses caused by malaria, the world over is missing an opportunity to use a product, which can be safely use in the small quantities that are needed.

"The world has done the right thing in identifying the dangers, but in the process of doing that we have neglected to consider that there could be good use of DDT," he said.

Ramsammy stressed that with DDT Guyana can be free of malaria is as little as three years. "It seems an unwise decision not to consider wider use of DDT in a controlled manner," he said.

In this light, Ramsammy proposed that the World Health Organisation (WHO) and the United Nations (UN) ensure the restricted production of DDT.

"The proposal is that there is a global entity responsible for the procurement and distribution of DDT...the distribution will only be made to those countries with a high disease burden for malaria...this way we ensure that it is not abused. We know where it is going and who is getting it, we can monitor it," he opined.

The Health Minister said the Millennium Development Goal (MDG) target, relative to malaria, is attainable, but the alternatives - biological control, fogging, bed nets and treatment (all good once used in the right setting) - are not enough to completely eliminate malaria.

However, Ramsammy said vector control via DDT; plus the combination of good medicines for treatment, better trained health care workers in diagnosing malaria, among other things; will give Guyana a chance to eliminate the malaria scourge.

"There will always be an up and down problem...it will be a yo-yo effect, something we will see for decades to come with the potential to cause us many losses," Ramsammy said.

According to him, malaria has in the past, and will continue to: be a major contributing factor to the death toll; be the cause of disability; be the cause of impoverishment in families and within communities; impact national economies; and impact productivity, expressly it mining and forestry sectors.

"The cumulative effect of what malaria has done globally and then look back at 100 years of DDT use in vector control, before is was less accessible, the

negative impacts do not come close to the devastation we saw in just the last 20 years...you cannot equate the negative impacts of DDT in vector control and what we have seen in the last two decades," Ramsammy said.

The Health Minister stressed that no method outside of vector control has ever led to elimination of malaria.

"Everywhere we don't have malaria, if you go back in history, one would see that there was malaria in that area, but it was eliminated through vector control. It was eliminated through DDT," Ramsammy said.

The Health Minister maintained that unless the "knock-our punch" is considered malaria will continue to plague Guyana - continue to plague nations across the globe.

"As long as it is there it will always come back strong...unless we make use of that knock out punch we will be constantly dealing with malaria in a yo-yo way, down and up, down and up...this is a tragedy because if I had DDT today, 2011, Guyana would have been malaria free," the Health Minister said.

Health Minister calls for use of DDT to fight vectors

07 Mar 2011
Kaieteur News Online

Guyana is adopting strategies that fully utilises biological methods as a control strategy for vectors thus the use of BTI (Bacillus Thuringiensis Israelensis) is one that should be more widely utilised in Guyana.

This is according to Minister of Health, Dr Leslie Ramsammy, who recently commended the work that is being done through the efforts of the Canadian International Development Agency (CIDA), the Pan American Health Organisation (PAHO), the Ministry of Health, and professionals of other entities, along with communities in the pilot work currently being undertaken in this regard in Mahdia and Bush Lot.

However, the Minister observed that the work, although commendable, is proceeding at snail's pace, a pace that "is not deserving" of a matter of such serious magnitude.

According to him, biological control using BTI can be used in many local communities and is a unique way of engaging the community in vector control.

He lamented though that "more than a year after we started that project, many of the people working on that project must be reminded that this project is still an ongoing one in Guyana. I am disappointed and I want to say publicly on behalf of the people who live in our villages that we are depriving them of a unique way of

addressing the problem through biological control."

The Minister noted that Guyana and too many countries in this Region have made poor use of residual spraying capacity that exist, even as he noted that access to expensive chemical for residual spraying is a constraint.

"I would hope that our use of residual spraying is improved. I believe that we are failing our people all those who have died of vector borne diseases. We have access to very effective chemical that we have made no use of over the years."

In addition, the Minister shared his conviction that the elimination of DDT (Dichloro-Diphenyl-Trichloroethane) has been too early. DDT is a well-known synthetic pesticide which has been banned for agricultural purposes, but there is still limited controversial use in disease vector control.

"I support the non-use of DDT for agricultural purposes but not the elimination as a vector control chemical and I would say that until I die. I don't believe we have any justification in terms of the number of deaths globally and the morbidity due to these diseases," the Minister added.

He underscored too that the use of chemicals locally has been one that is full of "pot holes. The flirtation has been so long that the prospective courting partners are getting too old for flirtation."

He further pointed out that fogging and the use of appropriate chemicals to control the mosquito populations is still an effective tool, adding that "our hesitation in the use of fogging bewilders me."

As a result, he noted that the Ministry of Health is poised to build the fogging capacity of all Local Government entities, insisting that it (fogging) is an exercise that cannot be handled from the Ministry but rather it has to be a capacity that is built into the Municipalities and other such entities as part of their governance mandate.

"It is an obligation to our citizens and while the Ministry is trying at this time to do some fogging exercise it is believed that the Municipalities and the Regional Governments and the Neighbourhood Democratic Councils are failing our people by not aggressively taking on this role."

While the Municipalities and the Local Governments have not taken up this role, Minister Ramsammy noted that the Ministry has an obligation to "fill the vacuum. We cannot stand by and not do anything.

While we will continue to appeal to the authorities to do their job we must take a more robust approach," Minister Ramsammy insisted.

He noted though that the responsibility does not only lie with the Ministry's Vector Control Unit but also other departments including the Environmental Health Unit, which according to him has been weak in its efforts and sometimes "behave as though this is not a role for them to play. It is a role for all of us."

The public also has a role to play, the Minister stressed.

Annex 2

Roberts, Donald & Tren, Richard, “International advocacy against DDT and other public health insecticides for malaria control.” *Research and Reports in Tropical Medicine*, January 19, 2011.