

Crop spraying: a *déjà vu* debate

From the Andean strategy to the Afghan strategy

The United States is putting strong pressure on the Afghan government to officially adopt the strategy of eradicating the opium poppy through aerial spraying of the crops with the herbicide glyphosate. Given that this practice has been widely applied in other parts of the world, it is worth taking a look at other experiences of spraying and a more general look at the practice of eradicating crops as an anti-drugs measure.

In September 1989, President Bush (senior) delivered his famous speech announcing the “Andean Strategy” or the “Andean Initiative”, which aimed to attack the supply of cocaine at its source, the coca fields of Peru, Bolivia and Colombia. This programme was supported by a multi-million dollar financial package for the countries in the region made up of around 50 per cent in economic aid and another 50 per cent in military and police aid, with a greater emphasis on the military than on the police.¹

From then on, the military has played an increasingly central role in US drugs policy. This militaristic shift allowed the armed forces in those countries to become involved in rural economic and social life, often with fatal consequences. This emphasis on militarism continues, as is demonstrated by the current interventions of the largest military apparatus in the world, NATO, in the economic and social life of Afghan peasants. Given the Andean experience, there could not be more forewarning of the consequences of this process.

What benefits have been reported following almost two decades of the Andean Strategy, which is based on the destruction of crops? Year after year, the US government proclaims the ‘success’ of its anti-drugs policy. Year after year, statistics are produced that belie that proclamation. If the Afghan anti-drug authorities had the necessary independence and political will to analyse the prospects of forced eradication in their country, they wouldn’t have to look any

CONCLUSIONS & RECOMMENDATIONS

- The long experience in the Andean countries with forced and aerial eradication with herbicides show that these measures do not achieve their objectives. Successful drug crop reduction must be done in a voluntary way, and only after alternative development programmes ensure a real source of income for the peasant farmers.
- Following seven years of Plan Colombia, the US Congress is questioning the effectiveness of aerial spraying with herbicides. The US should not recommend to Afghanistan what its own legislators are increasingly daring to state was a failure.
- Aerial spraying with herbicides is radically opposed to ‘winning the hearts and minds’ of the Afghan people. Implementation would benefit Taleban insurgency and deepen the division between the government and the population.
- Instead of focusing drugs policy on the areas of cultivation, it would be more useful to push the fight against state corruption at all levels, and contribute to the consolidation of healthy judicial system. This would represent a more lasting deterrent on drug trafficking.
- Rather than spraying hundreds of millions of dollars over the fields of Afghanistan, this money should be invested in effective sustainable development programmes, and strategies to attack the finances of drug trafficking.
- The scientific committee called by the Afghan government should consider the trajectory of scientific controversy about the impact of the crop-spraying programme in Colombia on health and the environment, to avoid the same contradictions that have paralysed and politicized the debate for years.
- The Afghan government should stick to its original, well-founded position of rejecting crop spraying. Repeating the same errors made by Colombia, under pressure from the US, will put the prospects for peace and reconstruction in Afghanistan into even greater peril.

Coca cultivation in hectares

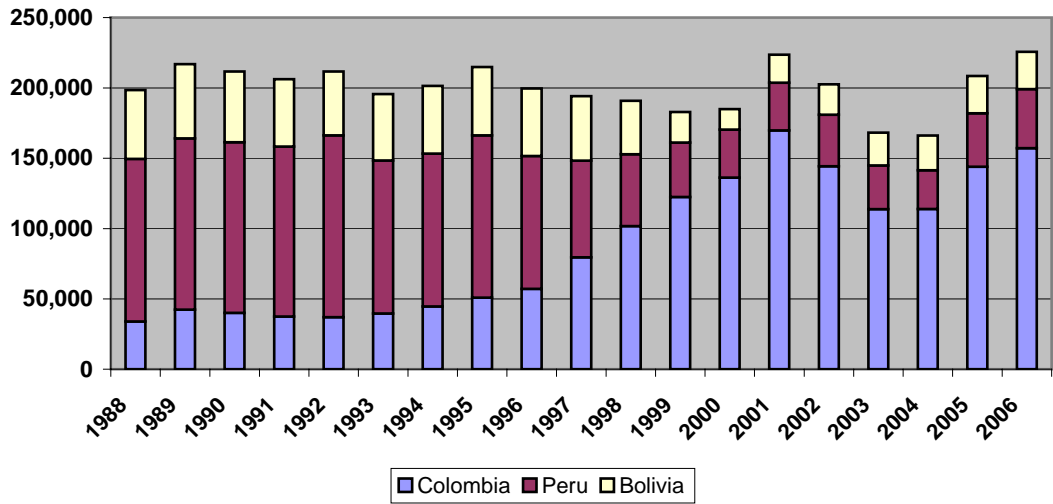


Figure 1 - Source: Office of National Drug Control Policy ONDCP

Eradication results in Colombia

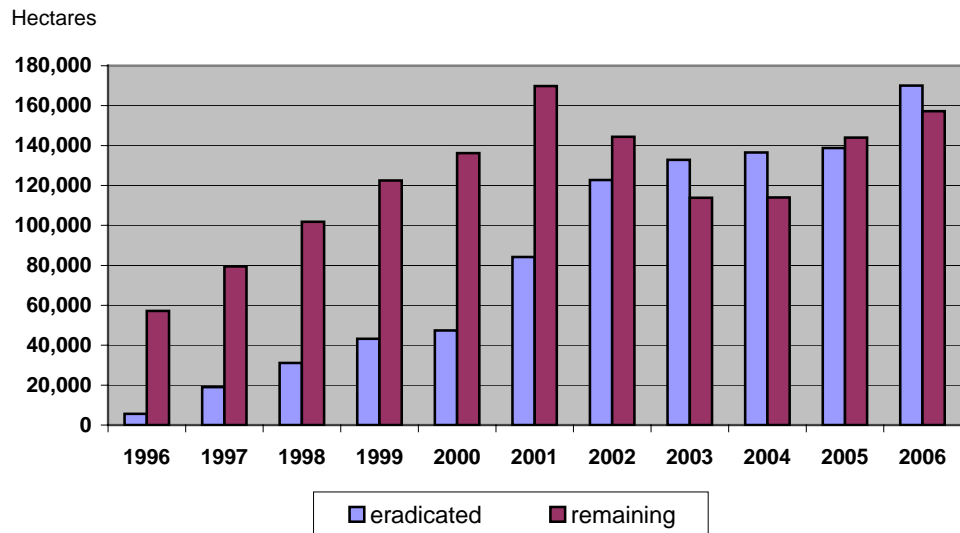


Figure 2 - Source: Office of National Drug Control Policy ONDCP

Global cocaine production in metric tons 1988-2006

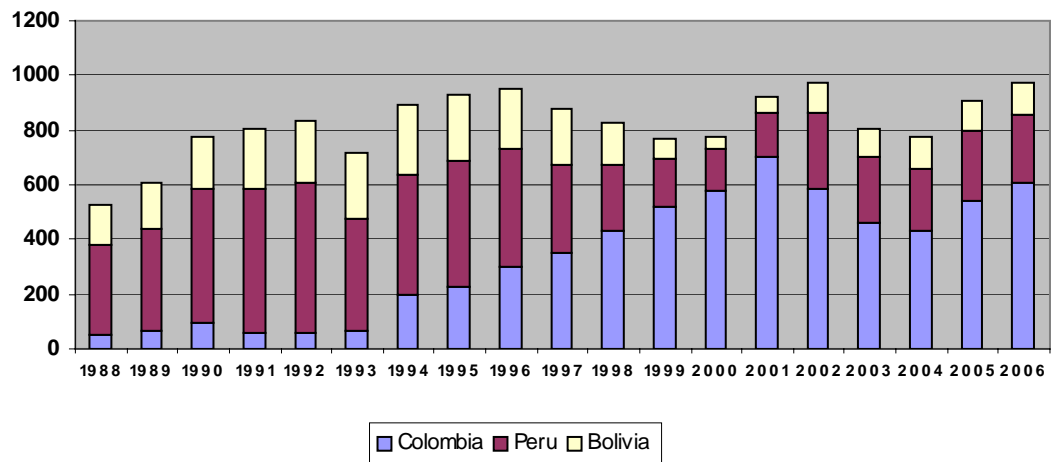


Figure 3 - Source: INCSR and National Drug Intelligence Services

further than the data coming out of the Andean region.

How extensive were coca crops in the Andean countries at the end of the 1980s, and what is the situation today? How many provinces were involved in coca production then, and how many now? What was, and what is cocaine production in metric tonnes? Bearing in mind that one of the implicit objectives of the strategy is to interrupt drug trafficking activities and, in that way, decrease the quantities of drugs arriving in consumer countries, it is also worth asking: What was the state of drug trafficking twenty years ago, and what is it like today? What has happened to organised trafficking networks? What has caused the massive diversification in cocaine trafficking routes that we see today? What progress has been made in preventing money laundering? Furthermore, if we know that the ultimate aim of this policy is to reduce demand for drugs, it is also worth looking at statistics for consumption from two decades ago and comparing them to today's figures.

Unfortunately, the Andean strategy has had no significant impact on any of the three major links in the drugs chain – production, trafficking and consumption. On the contrary, experience shows that efforts to attack drugs at their source have not only been useless, but also counterproductive. As you can see in *Figure 1*, the total area in hectares cultivated has remained more or less stable since 1988. Reductions in the total area planted in Peru and Bolivia resulted in a huge increase in Colombia in those in the same years. We now have sufficient evidence to know that the 'success' of eradication in one department or province in any one of these countries goes hand in hand with failure in another, where the number of crops will certainly increase. In the same way that the authorities know that for every gangster they jail, another will emerge to replace him, and that for every drug trafficking network they dismantle there are several waiting in line to take its place.

Colombia is the country that best demonstrates the failure of forced eradication. Ten years after Bush's famous speech, at the end of the 1990s, when it was clear that the strategy of eradicating crops was not producing good results, the US government decided that what was required was to quantitatively increase their attack. As a result they put forward Plan Colombia. *Figure 2* clearly illustrates how, despite a decrease in 2003 and 2004, the significant increase in eradications every year since 2000 has not managed to contain

the increase in planted areas. As a consequence, this policy has been unable to reduce the total production of cocaine. On the contrary, between 1988 and 2006, total production increased considerably, as can be seen in *Figure 3*. The figures used to create these three graphs come from US anti-narcotics agencies.

Plan Colombia, which sounded distinct and original in the beginning, was nothing more than a reiteration of the principles of the Andean strategy, that is to say, more, much more, of the same. The new variant was that the 50-50 balance disappeared and the military component now accounts for around 80 per cent of the funding². Seven years of Plan Colombia unequivocally show that a strategy based on crop destruction, no matter how much capital, technology and military presence is injected into it, is both costly and stupid. Yet now it is about to be applied to some of the most sensitive geo-strategic regions in the world.

Massive aerial eradication using the herbicide *RoundUp*, the principal component of which is glyphosate, was one of the cruellest aspects of Plan Colombia, because it meant a direct attack on the weakest link in the chain: the peasant farmer, who made the least in terms of profits from the drugs trade.³ Moreover, forced eradication has not only failed to reduce the number of hectares planted, it has also led to undesirable effects such as the expansion of coca-growing territory. This has extended the damaging environmental effects of illicit production: deforestation of jungles and mountains, and the poisoning of rivers, as a result of indiscriminate and inexpert use of chemical precursors.⁴

With crop spraying in Afghanistan, the US hopes to kill two birds with one stone, the opium poppy crops, and the Taleban terrorists, in the same way as they claim to have done in Colombia. They conveniently ignore the statistics shown above, which show that at the end of 2006 there were reportedly more coca crops than in previous years. Furthermore, there are no indications that the guerrilla group, the FARC is disappearing.

Eradication and drug trafficking

By placing the emphasis on eradication, it is assumed that the drug problem is concentrated in the areas where the illicit crops are produced. In other words, if it is known that there is a lot of coca in the Colombian departments of Putumayo

or Nariño, or a lot of poppies in the Afghan province of Helmand, they decide to concentrate their actions in these areas. This fails to recognise the fact that drug trafficking does not only operate in these areas, but in many other regions in which there may not be a single coca bush or opium poppy. The emphasis on eradication diminishes the onus placed on the next stages in the process, which are the stages involving the people who make most profit from the market in drugs, the medium sized and large traffickers. These traffickers are, in general, not to be found in the same areas as the agricultural production.

The reduction in crops in provinces in the North of Afghanistan – a fact presented by the US as a success of their anti-narcotics policy – does not mean that the drug no longer passes through these areas. As a result, the policy of eradication could be indirectly benefiting drug trafficking, by diverting police attention to the areas where the crops are grown.

The question should be: what most affects a drug trafficker, eradication of 10,000 hectares of coca in Colombia or the interruption of a financial connection? Combating money laundering has a far greater impact on the economy of the Mafias than the eradication of crops that can always be replanted in another part of the country or in another country, by peasant farmers just as poor as the ones that came before them.⁵ Eradication has not, for example, prevented the Mexican cartels from laundering up to \$10,000 million dollars a year in the US banking system.⁶

The emphasis on eradication also diverts attention that should be focused on the problems of security linked to drug trafficking. When eradication is used to neutralise the armed groups that move in the regions where cultivation is taking place (as happens in Colombia, and may well happen in Afghanistan), this encourages conflict and escalates security problems, which principally affect the civilian population. This creates the impression that the insecurity is related to crop cultivation, ignoring a more obvious relationship such as the insecurity resulting from drug trafficking activities. A typical example of this is the situation in the Colombian port of Buenaventura. Although the presence of coca crops there is so small it is almost irrelevant, the all out war that has developed between different gangs interested in controlling the cocaine export market has turned the Pacific port into one of the most dangerous places on the continent.

The strategy of attacking drugs at their origin has not stopped the flow of drugs. In their attempt to eradicate crops and ‘terrorists’ (be they the FARC or the Taleban) with one blow, the authorities have neglected non-ideological driven drug trafficking, which has taken advantage of those circumstances to expand and penetrate more deeply into important areas of society.

Glyphosate, a déjà vu debate

There is nothing original about the new US anti-narcotics proposal for Afghanistan. It has been tried – and it has failed – in other parts of the world. The recycling of this policy for Afghanistan is already beginning to show the first signs of a history condemned to repeat itself.

President Karzai’s government wants to form an international committee of scientists⁷ to review the safety of glyphosate, which will probably restart an old debate that has been raging in the western hemisphere for years. It is a debate in which scientific arguments encouraged by the US government guarantee that glyphosate is harmless, while scientists linked to universities and other independent research centres highlight the risks to the environment and human health of the mix being applied in aerial spraying operations. This latter group take into account the high concentrations of glyphosate and other ingredients used in the formula known as *RoundUp*, which was used for spraying in Colombia and, if it is approved, will be used in Afghanistan.

If the Afghan study sides with the conclusions of the latter group of scientists, it will be rejected by the US using the arguments of the former group. Glyphosate will be sprayed despite the doubts expressed by the Afghan government. Owing to the weight of funds destined for other projects, the Afghan government will probably have to pretend that glyphosate is “less toxic than aspirin”⁸, just as the Colombian government did. The gesture of calling a committee of scientists is a clear sign of the unease felt by the Karzai government at the prospect of spraying. But at the same time, it is the first step towards capitulating on their earlier position of total rejection of aerial eradication of the opium poppy.

The years of controversy surrounding the crop-spraying programme in Colombia have not managed to resolve the fundamental contradiction between the supposed innocuousness of the active ingredient in the herbicide and the wave of complaints that have

been and continue to be received by local authorities. This is partly explained by the fact that peasant farmers tend to immediately blame the herbicide for any illness in their family or the deaths of animals. The US is well aware of this reaction, after the secret, unauthorised 'dry run' they did in Afghanistan in 2004, when they sprayed inactive pellets over poppy fields in Nangarhar and Farah. According to a high ranking US official, it would be better not to do it because "every goat with a bad ear and every crop that doesn't grow" will be attributed to crop spraying.⁹ At the same time, it is also true that many of the complaints presented by the Colombian Office of the Ombudsman cannot be easily explained or ignored. The other part of the explanation is that the exact chemical details of the mix being sprayed are not made public.¹⁰

The majority of scientific research focuses on glyphosate rather than on the commercial formula, and on laboratory tests rather than on the environmental conditions and effects on health in the areas being sprayed. Thus, for example, the scientific investigation backed by the US confirms that "glyphosate is practically non-toxic for fish", however, in reality all the fish in a pond that was accidentally sprayed died. In the same way, although some studies confirm the low toxicity of glyphosate for human beings, no explanation has ever been given for the well-documented increase in health problems in the affected areas, in the weeks following crop-spraying operations.

In addition to the consequences for health and the environment, the principal reason for the Afghan government's opposition to crop spraying is the political impact. Afghan communities reject this measure, which strips them of their source of income; its application therefore ends up benefiting the Taleban and other sectors in opposition to the government. For specialists in Afghan affairs, spraying the opium crops would damage the counter-insurgent efforts. Even the Pentagon has reservations about aerial operations against illicit crops for this reason.

This explains NATO's refusal, to date, to get involved in the work of eradicating the crops.¹¹ Just as in the 1990s, when the US initiated and supported the participation of armed forces in anti-narcotics operations in the Andean countries,¹² they are now proposing involving international armed forces in their failed war on drugs, turning it into a war against peasant farmers.

The gradual dismantling of the aerial eradication program in Colombia

The Bush Administration's interest in spraying in Afghanistan does not sit very comfortably with the change in policy that is beginning to be perceived in the US Congress. On the initiative of the Democrats in Congress, faced with the evidence of the failure of Plan Colombia, the US legislators have begun to come out in favour of a softened Plan Colombia (more money for development and less military aid, a return towards the 50-50 scheme in the early days of the Andean strategy) that would bring with it a reduction in funding for hugely expensive aerial sprayings, giving priority to manual eradication. "It is beyond dispute that spraying chemicals is not a sustainable strategy", said Senator Patrick J. Leahy (Democrat from the State of Vermont). He also said that, "Without real economic alternatives, coca farmers will find ways to grow coca... we are shifting more funds into economic and social programs".¹³

The US House of Representatives was specifically opposed to prolonging funding for crop spraying into 2008, whilst the Senate declared that aerial eradication is less effective than manual eradication. This is a precedent that the Bush administration should not ignore when it comes to deciding whether to continue pressuring the Afghan government to accept spraying of the poppy crops.

On the Colombian side, the discord between the White House and Congress about crop spraying has left President Uribe's government somewhat disconcerted. During seven years of Plan Colombia, Colombian anti-drug authorities had become accustomed to believing and repeating the slogan imposed from Washington, that the crop spraying 'is a success'. How do they now explain, that in a period of a few months, this 'success' could have degraded so much as to demand the reduction and dismantling of the crop spraying programme? In its discomfort, the Uribe government insists on continuing to spray, despite the fact that they know there is not a single social sector in Colombia that is supporting the crop spraying. Throughout the past seven years of massive spraying, the press, the church, civil society organisations, and often even the local authorities themselves have constantly expressed their opposition to a practice that has caused more damage than positive effects. There is still conflict between Colombia and Ecuador, generated by spraying in the border areas: an unnecessary conflict that

joins the long list of collateral damages associated with glyphosate spraying.¹⁴

For those who have closely followed the debates in Colombia over the past decade, current US pressure to introduce crop spraying in Afghanistan gives a painful sense of *déjà vu*. Particularly now, when lessons are beginning to

be drawn in Colombia from the failure of the spraying and the damage it has caused. Yet the US administration wants to push Afghanistan into making the same mistake. Crop sprayings unleashed a vicious circle of human, social and environmental destruction in Colombia, and they will do the same in Afghanistan.

Research into the impact of the herbicide sprayed in Colombia

Observation of the effects of glyphosate and its commercial mixes has been a topic of debate in the western hemisphere since the beginning of Plan Colombia. Based on an enormous amount of information on environmental damage and health problems that have appeared in the zones affected by the spraying, various bodies have repeatedly requested that an independent scientific study be carried out that enables the impact of glyphosate on the zones being sprayed to be objectively established. Various attempts have so far been made. The most notorious of which was that begun by the Inter-American Drug Abuse Control Commission (CICAD), in 2005. However, in all cases, the conclusions drawn have not satisfied all parties involved in the debate. Below we present a list of studies and commentaries by various specialists:

Glyphosate – (CASRN 1071-83-6), US Environmental Protection Agency
<http://www.epa.gov/iris/subst/0057.htm>

A vicious circle – The chemical and biological war on drugs, by **Martin Jelsma**.
Transnational Institute TNI, March 2001. Documents how the spraying of illicit crops in Colombia unleashed a vicious cycle of human, social and environmental destruction.
<http://www.tni.org/archives/jelsma/viciouscircle-e.pdf>

Las fumigaciones aéreas sobre cultivos ilícitos sí son peligrosas – Algunas aproximaciones
This study by Colombian biologist **Elsa Nivia** from the Pesticide Action Network (PAN) was carried out in the department of Putumayo between February and April of 2001. The study concluded that glyphosate affected health and the legal crops being grown in the region.
http://www.mamacoca.org/feb2002/art_nivia_fumigaciones_si_son_peligrosas_es.html

Study of the health complaints related to aerial eradication in Colombia, “Nariño Report”
US State Department, September 2001
https://colombia.cms3.getusinfo.com/uploads/zg/pW/zgpWH6drJAE5ApamaB5T_A/wwwfapoe.pdf

Efectos de la fumigación con glifosato en los municipios del valle del Guamuez, San Miguel y Orito, Putumayo. Headed by **Dyva Revelo Calderón**,
Epidemiological Section of DASALUD Putumayo. December 2001.
http://www.tni.org/detail_page.phtml?act_id=17594

Aerial Eradication of Illicit Coca in Colombia
US State Department, 2002. <http://www.state.gov/p/inl/rls/rpt/aeicc/c7470.htm>

Critique of the “Nariño Health Report”: Health Effects of Spray Campaigns in Colombia
Rachel Massey, Institute for Science & Interdisciplinary Studies, 7 March 2002. This memo highlights the principal weaknesses of the Nariño report, the incoherence of the methodology for selecting samples, and the lack of any relationship between the data presented and the final conclusions.
<http://www.tni.org/drugscolumbia-docs/narinocritique.pdf>

Aerial spraying in Colombia: Health and environmental Effects
Comments of the Institute for Science & Interdisciplinary Studies, 19 March 2002. Concludes that there is substantial evidence that crop spraying in Colombia is damaging food crops, delicate tropical ecosystems and human health.
<http://www.tni.org/drugscolumbia-docs/healthenvironment.pdf>

Compliance with Fumigation Conditions in the Andean Counter Drug Initiative.

Memo from four NGOs. 10 April 2002.

<http://www.ciponline.org/colombia/02041004.htm>

Response from EPA Assistant Administrator Johnson to Secretary of State, 19 August 2002.

Response from Stephen Johnson, EPA official, to the State Department request for an evaluation of the use of glyphosate in Colombia.

http://www.mindfully.org/Pesticide/2002/Eradication-Coca-Colombia-INLFASep02_3.txt

Comments on US Environmental Protection Agency, “Consultation review of the use of pesticide for coca eradication in Colombia”, 19 August 2002.

Published by the Bureau for International Narcotics and Law Enforcement Affairs, September 2002. These comments were made by **Dr. Ted Schettler**, of the Boston Medical Centre (Boston MA).

http://www.mamacoca.org/FSMT_sept_2003/pdf/schettler%20scientist%20report.pdf

Report on issues related to the aerial eradication of illicit coca in Colombia.

Published by the Bureau for International Narcotics and Law Enforcement Affairs, September 2002.

http://www.mindfully.org/Pesticide/2002/Eradication-Coca-Colombia-INLFASep02_1.htm

Memo on the Department of State Report to Congress Regarding Aerial Coca Eradication in Colombia.

Prepared by **Anna Cederstav**, from the Earthjustice scientific team and InterAmerican Action for the Defence of the Environment (AIDA), September 2002.

http://www.mamacoca.org/FSMT_sept_2003/pdf/cederstavlast.pdf

Derechos humanos y derecho internacional humanitario en el marco del conflicto armado y de las fumigaciones de los cultivos de coca en el departamento del Putumayo.

Resolution of the Colombian National Defender’s Office, 9 October 2002.

<http://www.defensoria.org.co/pdf/resoluciones/defensorial/defensorial26.pdf>

Fumigations – The Debate. TNI online publication.

This is a synthesis of debates to date about crop spraying and the use of *RoundUp*. 2004

http://www.tni.org/detail_page.phtml?act_id=3137&username=guest@tni.org&password=9999&publish=Y

Environmental and Human Health Assessment of the Aerial Spray Program for Coca and Poppy Control in Colombia

Keith R Solomon and others. 31 March 2005. This study is generally in favour of the use of glyphosate. Nevertheless, it highlights the toxic effects of the herbicide on amphibians.

<http://www.cicad.oas.org/en/glifosateFinalReport.pdf>

Observaciones al “Estudio de los efectos del programa de erradicación de cultivos ilícitos mediante la aspersión aérea con el herbicida glyphosate (PECIG) y de los cultivos ilícitos en la salud humana y en el medio ambiente.

Headed by **Tomás León Sicard**, agrologist at the Institute of Environmental Studies, National University of Colombia. May 2005.

http://www.idea.unal.edu.co/public/docs/Observ_IDEA_a_doc_CICAD.pdf

A few comments about the OAS-CICAD study of the impact of Glyphosate used in the eradication of illicit crops in Colombia, by **Ricardo Vargas**, 30 May 2005.

http://www.tni.org/detail_page.phtml?page=archives_vargas_cidad

The lethal impact of Roundup® on aquatic and terrestrial amphibians, headed by **Dr. Rick Relyea**,

Professor at the University of Pittsburgh. 2005.

<http://www.pitt.edu/~biohome/Dept/Frame/Faculty/relyeaabstract.htm#1703>

Plan Colombia Aerial Spray Program. Análisis & Critique of the U.S. Department of State Report to Congress Regarding Risk to Amphibians and Threatened Species

Comments by Interamerican Association for Environmental Defence, AIDA, that underlines the impact of glyphosate on amphibians, based on the study carried out by CICAD. 2006. http://www.aida-americas.org/templates/aida/uploads/docs/INTERIM_REPORT_CRITIQUE_dec2006.pdf

Rethinking Plan Colombia – Critical omissions in the CICAD environmental and health assessment of the aerial eradication program in Colombia

Interamerican Association for Environmental Defense (AIDA), 2006

http://www.aida-americas.org/templates/aida/uploads/docs/AIDA_CICAD_Critique.pdf

Evaluation of DNA damage in an Ecuadorian population exposed to glyphosate, headed by César Paz y Miño, María Eugenia Sánchez, Melissa Arévalo, and others. 7 November 2006.

Study carried out in the North of Ecuador, suggests that the formula sprayed has a genotoxic effect on the individuals exposed to it.

<http://www.scielo.br/pdf/gmb/v30n2/a26v30n2.pdf>

Drugs, pesticides, and politics—a potent mix in Colombia - As the controversy over glyphosate applications in Colombia’s coca fields continues, politics and passion may overtake the science.

This article by Naomi Lubick published in “Environmental Science and Technology Online”, provides important information relating to scientific data about glyphosate, Science News, 16 May 2007.

http://pubs.acs.org/subscribe/journals/esthag-w/2007/may/science/nl_cocaine.html

NOTES

1. For a detailed description of the Andean Strategy, see, *Clear and Present Dangers: The US Military and the War on Drugs in the Andes*, WOLA, October 1991.

2. According to data from the Center for International Policy (CIP), in 2001, shortly after the implementation of Plan Colombia, military and police aid reached 99% of total US aid to Colombia, Plan Colombia and Beyond, June 2007.

3. On chemical crop spraying in Colombia see: *A vicious circle: The Chemical and Biological War on Drugs*, Martin Jelsma, Transnational Institute, 2001.

4. Springer N., *La otra guerra*, El Tiempo, 2nd October 2007, and, *Una catástrofe silenciosa*, Semana magazine, 11th November 2007.

5. Soberón R., *Lucha contra lavado de activos golpea más a narcotráfico que erradicación de cultivos*, Andina, 23rd October 2007.

6. Figure provided by the Mexican Public Prosecutor in an interview with the BBC, <<http://news.bbc.co.uk/2/hi/americas/7070409.stm>>

7. Sample, K., *Afghanistan seeks Review of Herbicide in Poppy War*, The New York Times, 22nd October 2007.

8. *Fact Sheet: U.S. Support for Colombia Illicit Crops Eradication Efforts*, US State Department, Bureau of Western Hemisphere Affairs. <http://www.ciponline.org/colombia/071201.htm>

9. Landay, J.S., *Outcry against poisoning Afghanistan poppies*, The Seattle Times (USA), 26th October 2007.

10. There are many different formulas for RoundUp and its chemical composition is a commercial secret held by the producers, Monsanto. When RoundUp Ultra was introduced in Colombia, there was a wave of

health problems in the area being sprayed. The US denies any causal relationship; nevertheless, they abandoned Ultra and began to use another formula of RoundUp as the base for the mix used to spray the crops, shortly before CICAD was to commence the first official study including experiments using the mix in use at the time. To date there is no public information about what the new variant of RoundUp consists of.

11. *Missing Targets. Counterproductive drug control efforts in Afghanistan*, Transnational Institute “Drugs Policy Briefing”, No.24, September 2007, and, *Losing Ground – Drug Control and War in Afghanistan*, Transnational Institute, Drugs and Conflict, debate papers No.15, December 2006.

12. Zirnite P., *Reluctant Recruits. The US Military and the War on Drugs*, Washington Office on Latin America WOLA, Washington, August 1997.

13. Kraul C., *A new Anti-drug strategy in Colombia*, Los Angeles Times, 4th October 2007.

14. *The politicisation of fumigations. Glyphosate on the Colombian-Ecuadorian border*, TNI Drugs Policy Briefing No.20, February 2007.

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