#NO GREEN DRUGS

KNARK
EN MILJÖKATASTROF

AIM OF THE PROJECT

Reduce the use of drugs among young people by showing the effects on the environment:

- Analyse and describe the environmental consequences
- Create a strong network of partners
- Publish a booklet to the target group
- Initiate more research

FUTURE & Partners

Educate and give information to:

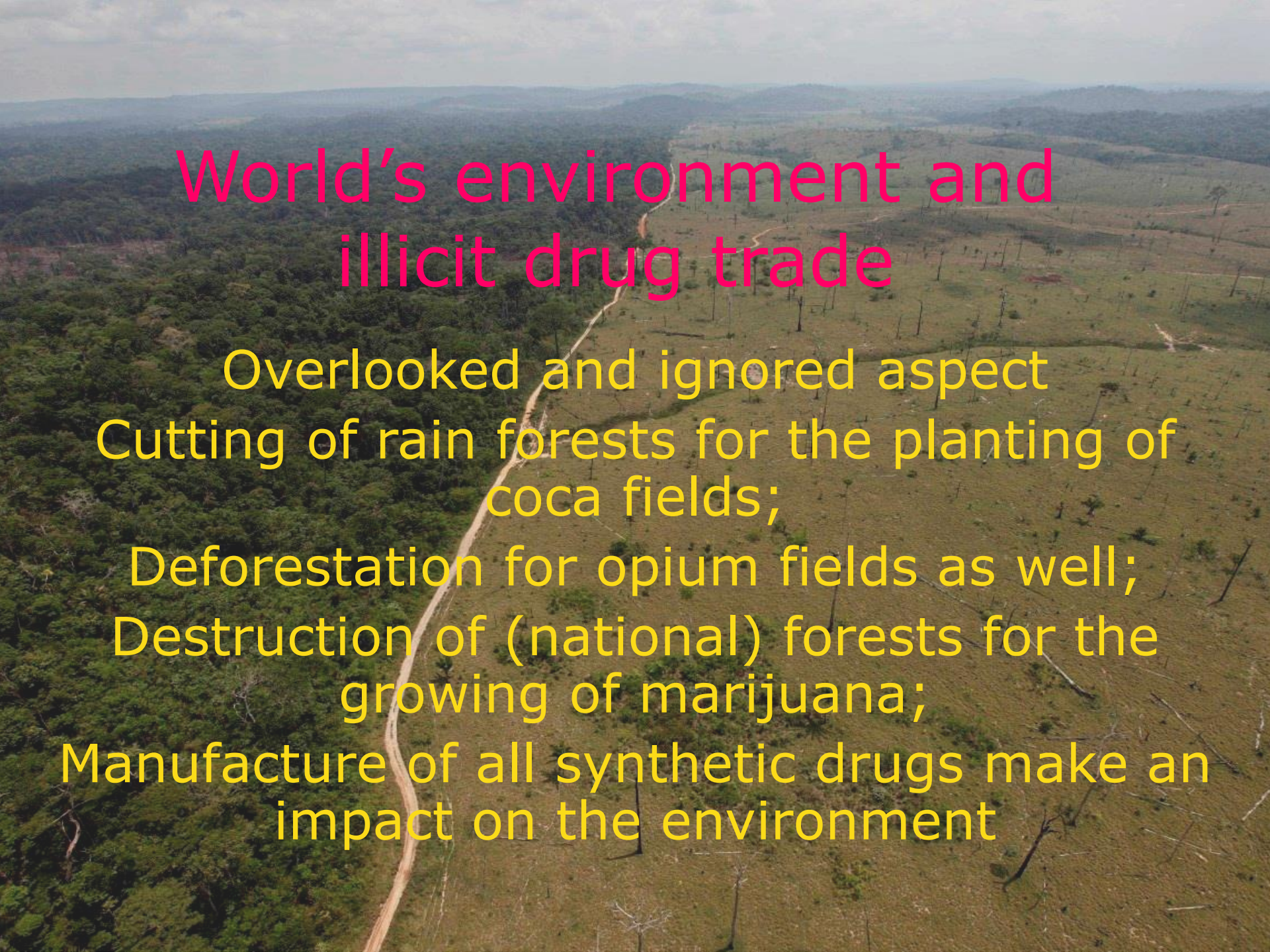
- Teachers, school authorities
- Pupils
- Parents
- Youth organisations
- The media

WWF

Göteborgs Stad

SMART UNGDOM

UPPSALA UNIVERSITET



World's environment and illicit drug trade

Overlooked and ignored aspect

Cutting of rain forests for the planting of coca fields;

Deforestation for opium fields as well;

Destruction of (national) forests for the growing of marijuana;

Manufacture of all synthetic drugs make an impact on the environment

DRUG TRAFFICKING

Causes air,water and soil pollution through:

- Deforestation
- Pesticides and fertilizers
- Chemical waste
- Energy use

Cannabis - 40 000 ton

CANNABIS AND ELECTRICITY

New research : Indoor Cannabis production in US =

- 1 % of national electricity consumption

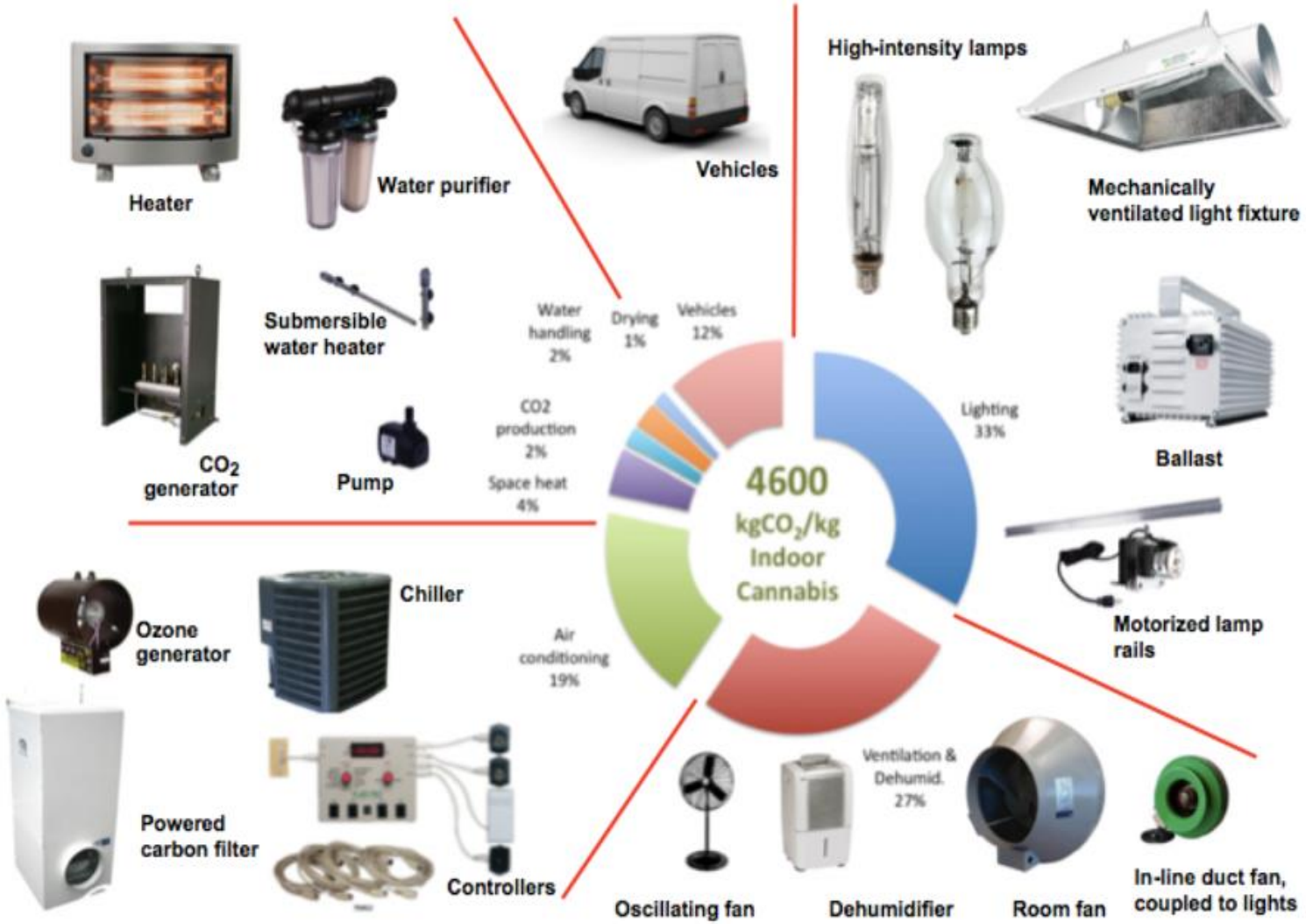
- 3 % of household electricity use in the US

CANNABIS AND ENERGY

- 7 US power stations
- (1 Fukushima)

- 35 % of all data centers In US

Appendix 1: Figures from Mills 2012



INDOOR CANNABIS

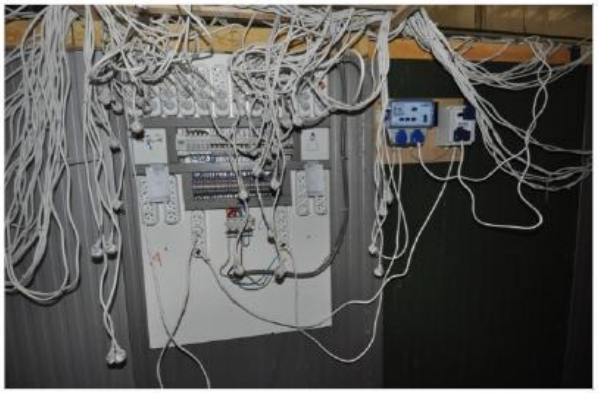
1. High-intensity lamps
2. Water purifier
3. Heater
4. Air conditioning
5. Watering
6. Ventilation
7. Transport

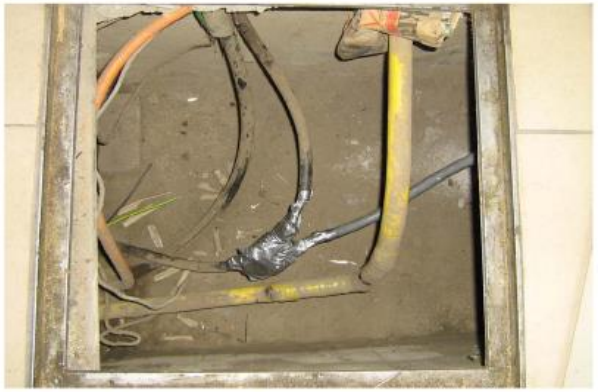
Marijuana growers steal electricity

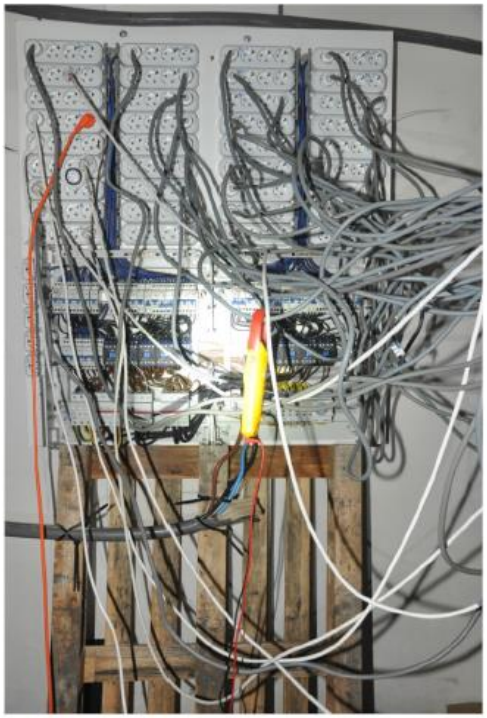
- THE NEDERLANDS:
- Marijuana plantations accounted for one billion kilowatt hours of electricity last year
- As much as the city of The Hague.

- In total, 4,700 plantations were discovered and dismantled.

THEFT







Theft of electricity...

Politie

CANNABIS AND CO^2

- One joint = 100-watts lamp X 25 hours= 1,5 kg CO^2
- One kg cannabis =4.600 kg CO^2
- Total CO^2 per year

=17 million ton CO^2 in USA

= 3 million US cars per year

CANNABIS AND WATER

- Cannabis demand a lot of water
- One cannabis plant = 33 liters

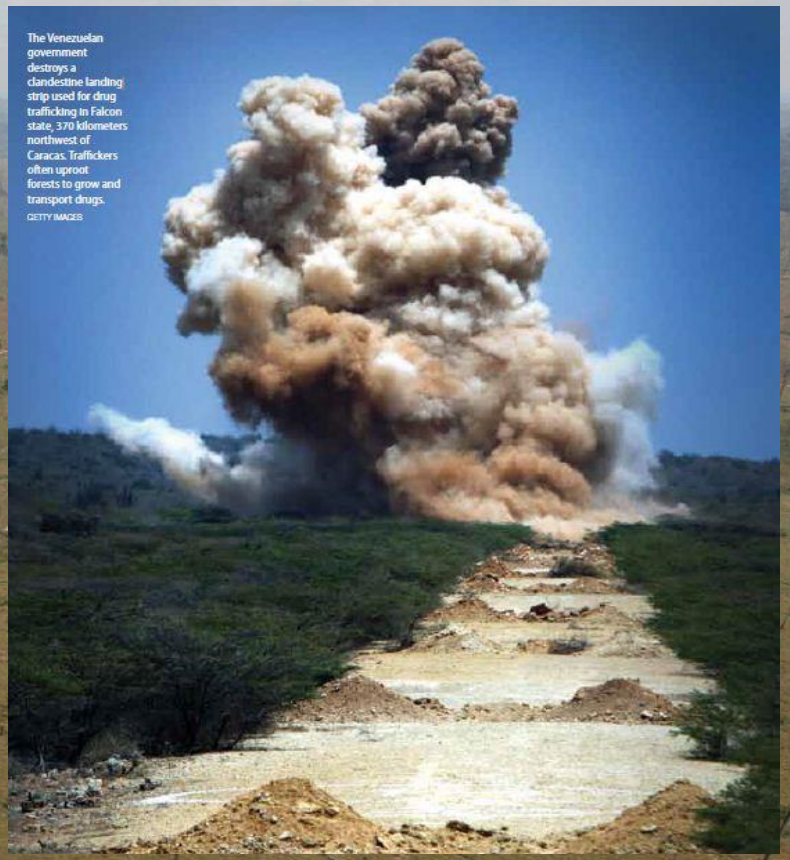
OUTDOOR CANNABIS

1. Rat poison
2. Fertilizers
3. Insecticides
4. Water
5. Vehicle transport
6. Illegal clearing of land (72% of cannabis in the US comes from national parks)

« Who is eating cement and drinking gazoline? »

Cocaine and deforestation

Antioquia Bolivia



The Venezuelan government destroys a clandestine landing strip used for drug trafficking in Falcon state, 370 kilometers northwest of Caracas. Traffickers often uproot forests to grow and transport drugs.
GETTY IMAGES

2.5 million hectares of Amazonian forest have been destroyed in order to grow coca

Colombian Minister of Environment: **1 million hectares of native forests** destroyed for drug crops

500 football fields each day

Slash-and-burn

Forest burning on Roatan Island in Honduras. Photo by Rhett A. Butler.

- **1g cocaine= 4 m^2**
- 1 Hectare = **7.4 Kg cocaine**
- Average 4 harvests (3 for heroin)
- Up to 600 years for forest recovering

Biodiversity

- Colombia is the **second most bio diverse country** in the World
- Amazonian rainforest produces **15% of the world's oxygen** and covers 35% of Colombia
- Colombia coastline = twice of Spain with 257 protected areas
- Colombia **has 35,000 plant species**, 13% of the worlds amphibians and 10% of the worlds fresh water fish.
- Colombia has 18% of the world's bird species and over 3,200 butterfly species

WHAT IS NEEDED?

- In order to transform one hectare of coca plants into cocaine:

- 550 kilograms of pesticides, herbicides, fertilizers, gasoline, ammonia, cement and sulphuric acid

Stage of process	Sub-process	Principle substances	Sub- Substances	Quantity	Concentration
	Coca leaf harvest	Coca leaf		659 kg	
	preparation of coca leaf	Cement	calcium oxide/sodium carbonate	50 kg	
		sodium hydroxide	ammonium hydroxide	1,7 kg	
		urea		11	
		Gasoline used	Diesel	270 gal	
		Gasoline consumed	Diesel	71 gal	
	Extraction	Acid sulphuric		2 L	2,70%
	Oxidation	Potassium permanganate		535 g	
Base paste and cocaine base	Precipitation	Ammonium hydroxide	sodium hydroxide/cement/sodium bicarbonate	1,8 L	
	Product			**1,2 kg**	
	Acidification	sulfuric acid		213 mL	2,70%
	Oxidation	Potassium permanganate		157 g	
	reduction	sodium metabisulfite		157 g	
	cleaning	gasoline		3 L	
	Precipitation	ammonium hydroxide		450 mL	7%
Reoxidized base	**Product**			**1 kg**	
	Dissolution	Solvent 1020	solvent 1125 / hexane/ethyl acetate/butyl/propyl/Methyl ethyl ketone	8,5 L	
		Methylene chloride		204 mL	
		Calcium chloride		117 g	
		activated carbon		14 g	
	Preparation of "bomba"	Ethyl acetate	butyl acetate/ n-propil acetate/methyl ethyl ketone	12 L	
		Calcium chloride		50 g	
Cocaine hydrochloride		Hydrochloric acid		240 mL	
	Product			**1 kg**	

Chemicals needed: ≈1,115 litres / kg cocaine

Toxic by products for 1kg cocaine

≈600 litres of water polluted

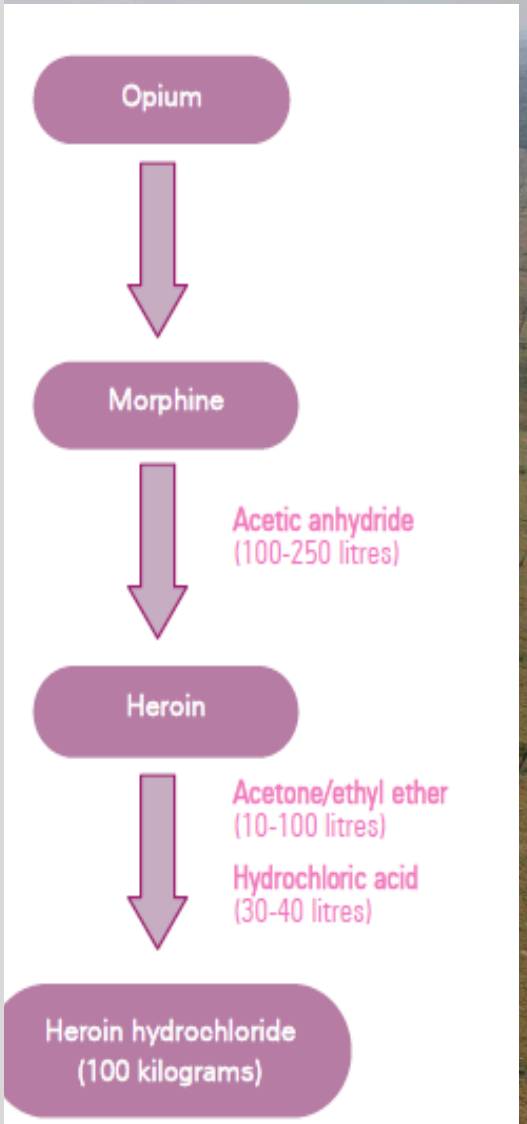
For an annual production of 620 tons

≈691 300 000 litres chemicals

HEROIN: DEFORESTATION AND CHEMICALS

Deforestation in Afghanistan and Southeast Asia

Refining requires toxic substances including **acetic anhydride, ammonia, acetone, and hydrochloric acid**



Note: The extraction of cocaine from coca leaf and the purification of coca paste and the crude base products of cocaine and heroin require solvents, acids and bases. A wide range of such chemicals have been used at all stages of drug manufacture.

ENVIRONMENTAL ISSUES

Production of synthetic drugs produces a lot of toxic waste

Waste is dumped into nature, industrial and even in urban areas

Waste is burned or drained

Severe pollution of the environment and dangerous for human beings and animals

AMOUNT OF WASTE

produced during the production of 1 kg Amphetamine

With the use of the Leuckart synthesis

Used chemicals

Phenyl-2-Propanone

Form amide

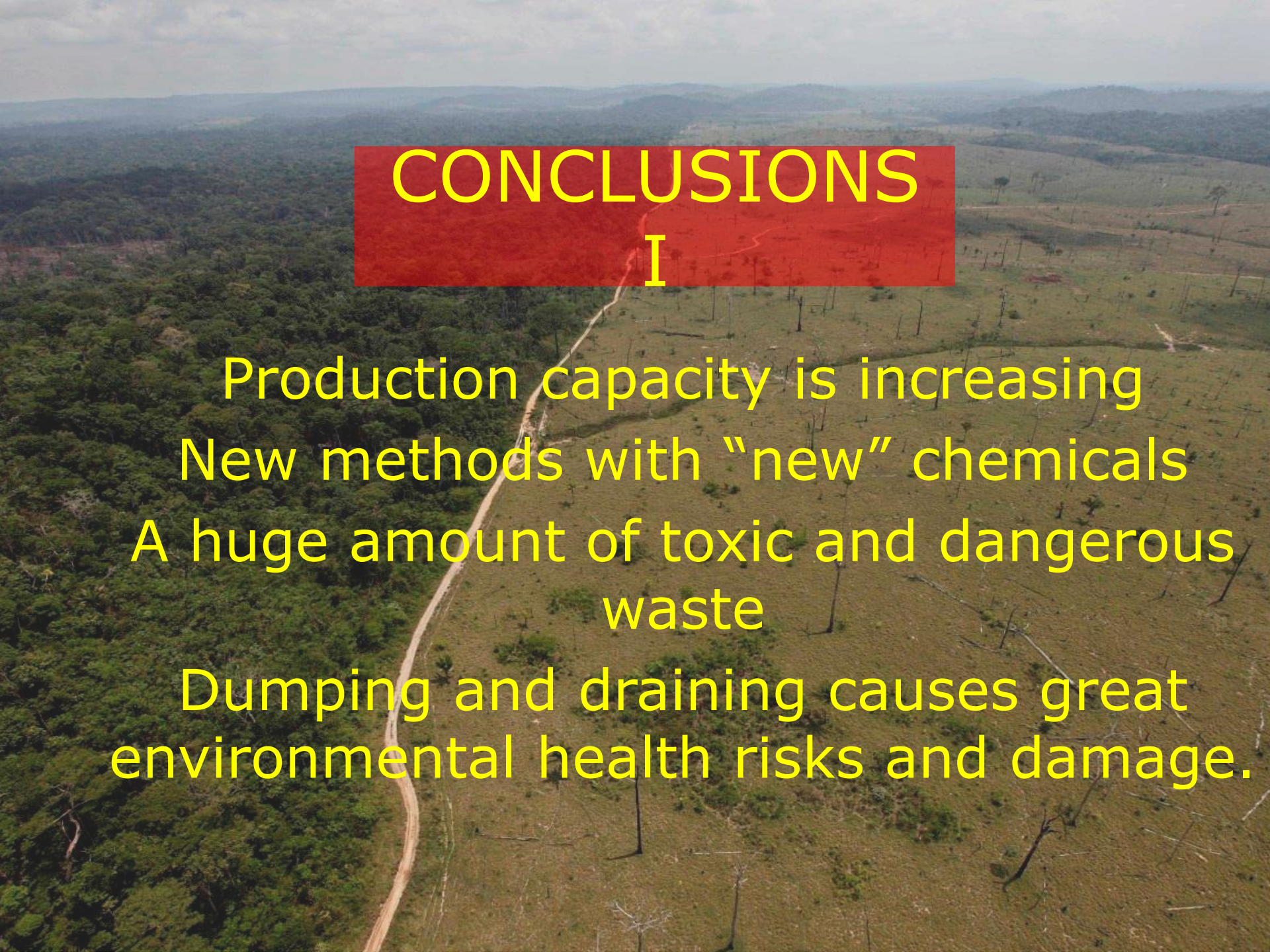
Formic -, Hydrochloric and Sulphuric acid

Acetone - Methanol – Ether

Production of **1 kg amphetamine** results in **20 - 30 kg** dangerous waste.

WAYS OF DISPOSAL I


newexc



CONCLUSIONS I

Production capacity is increasing

New methods with “new” chemicals

A huge amount of toxic and dangerous waste

Dumping and draining causes great environmental health risks and damage.

CONCLUSIONS II

Cleaning the environment costs enormous amounts of money

Health risks can be enormous - carcinogenic, mutagenic and teratogenic effects

Criminals are hindering the technical evidence collecting

The results of the criminal investigations needs to be improved.

RECOMMENDATIONS

- Politicians must show greater engagement and strengthen the laws against this type of criminality.
- Environmental organizations with the networks and means to study the issue must analyze the consequences of drug trafficking on soil, air, waterways and biodiversity.
- To reduce the demand the civil society must be informed about the environmental consequences

Thank you!

Institute for Security and Development Policy

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