



Managing Hazardous Pesticides

Barney P. Popkin

USAID/ANE/TS-W FSL, CHMM

bpopkin@usaid.gov

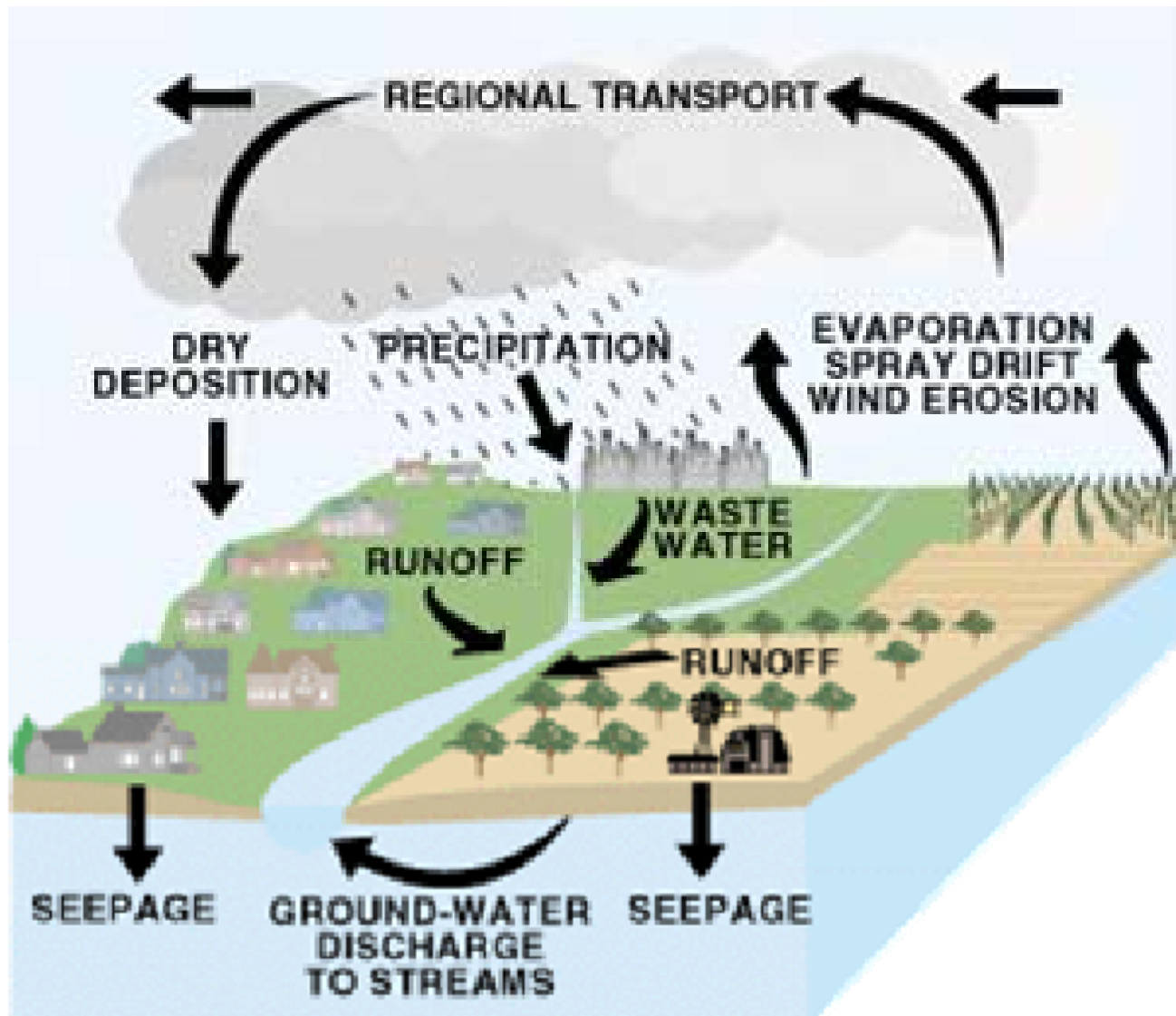
Carlitos - baby with birth defects attributable to pesticides (PBP)



Scope of Pesticide Problem

- ANE countries have pesticide training, procuring, use, management in crops, clothing/fabric export, food safety, vector control
- Bangladesh, China, Egypt, India, Jordan, Pakistan, Yemen... major, well-publicize pesticide food, export, health challenges
- Major pesticide quality, storage, transportation, application, misuse, disposal issues

Pesticide fate & transport in water



Specific Pesticide Challenges

- Misuse → worker & consumer illnesses & health costs
- Overuse → residues in exports which limits trade and markets
- Misuse → future years needing more toxic and more costly pesticides
- Poor disposal → future costs for cleanups and possible wide-spread illnesses

Don't buy more than you need



Predominant Contamination Problems

- Pesticide-related health costs in ANE countries are \$1,000,000s/year; ex. Bangladesh, China, Yemen
- Rejected or pesticide-residue limited exports cost \$10,000,000s/year; ex. China, Egypt, Jordan
- Potential future pesticide soil and water remediation and health costs \$100s M

Oops, pesticide mishandling



Newspaper headings

- Australia & EU reject food imports with pesticide residue, most recently from China
- Bangladesh fish a health hazard – not fit to eat
- India accuses Pepsi/Coke of pesticide contamination in bottled waters
- Pakistani farmers complain of adulterated pesticides being sold
- Saudi Arabia announces 2000 camels died from pesticide residue in feed
- Yemen sends 1000s of pesticide-infected persons to Saudi Arabia for treatment

30+ yr-old obsolete pesticides per 2003-2004 FAO Survey



Applicable Regulations and Conventions

- Rotterdam Convention
- Check local regulations; ex. Egypt, Jordan
- Are in-country regulations meaningful?
sufficient? enforced?
- Markets influence farm & food practices

Hazardous Pesticide Management

- BMPs to make best selections, assure quality of purchase, train staff, monitor staff and equipment, store and handle properly, apply as directed with minimal use, dispose of properly
- Implement Integrated Pest Management
- BMPs & IPM may have high initial costs but better health & stronger export markets

Plaguicidas Caducados (expired pesticides) & KOH (highly corrosive) jar



FERBAM ($C_9H_{18}FeN_3S_6$) fungicide oral LD50 of 4,000 mg/kg



Hazardous Pesticide Disposal

- Pesticide-contaminated site characterization & cleanups are costly, dangerous, embarrassing
- Predominate disposal - incineration, solidification & burial, return unused portions to suppliers for recycling/disposal
- Good disposal may have high initial costs but better health & lower future costs
- Doing it right the first and every time costs less

Good spent pesticide packing for transport & deep burial



Role & Obligations of USAID Projects

- USAID is especially pesticide-focused because of Reg. 216 history, extensive world-wide pesticide use and potential miss-use, severe human health effects & export costs & potential cleanup costs
- USAID can and has been sued over pesticide misuse

Design & Implementation Considerations

- Follow the PERSUAP requirements of 22 CFR & ADS
- Be sure to train, monitor, audit activities
- Seek ways to implement BMPs and IPM
- Encourage return-policies for suppliers

Take Home Messages

- Major pesticide quality, storage, transportation, application, misuse, disposal issues
- Misuse, overuse, poor disposal costs many millions of dollars, harms people, reduce exports
- Regulations are not sufficient, markets help
- PERSUAPs, BMPs, IPM, training, monitoring, auditing help
- Doing it right the first and every time is cheaper
- **Private-sector, market-driven initiatives**

References and Resources

- *Academy of Certified Hazardous Materials Managers*
www.achmm.org
- *CERCLA overview/Superfund*
www.epa.gov/superfund/policy/cercla.htm
- *Development Exchange Clearinghouse* dec.usaid.gov
- *Emergency Response program*
www.epa.gov/superfund//programs/er/index.htm
- *RCRA Online* www.epa.gov/rcraonline
- *USAID* usaid.gov/our_work/environment/compliance
- *USAID ANE* ane-environment.net
- *USAID AFR* encapafrika.org
- *U.S. Environmental Protection Agency pesticide program*
www.epa.gov/pesticides
- Universities, ministries, vendors

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“Sure it costs more. We have to squash bugs by hand.”

Group Exercise

Termite insecticides and landscaping pesticides have been discovered as partially buried drums and in soil and groundwater at an abandoned USAID-funded construction site. One hundred families claim illness from drinking pesticide-contaminated groundwater and breathing contaminated air. It will cost \$40,000,000 to investigate, cleanup and restore the site and take three years.

Five questions

1. Is it cheaper to pay the \$40,000,000 to cleanup the site or to pay each of the 100 families \$250,000 to “go away?” Is a “go-away” payment feasible? Why?
2. What could have been done to prevent this bad news? Who would have done it?
3. Would non-pesticide applications have been practical for termites and landscaping pests?
4. Prepare a skit or radio broadcast to announce a public meeting to discuss this issue and USAID’s role.
5. Write letter to the host-country’s Ambassador to the U.S. to describe the problem and how USAID will fix it.