
Pesticide Waste Challenges

Module Objective:

Understand basics of agrochemical misuse and disposal and the role of USAID in improving overall their management



Presentation Overview

- Scope of the hazardous pesticide problem
- Management of the hazardous pesticide problem
- Role of USAID
- Group exercise



Newspaper headings

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

Australia & EU reject food imports with pesticide residue, most recently from China



Pesticide Challenges are Cross-cutting

- 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

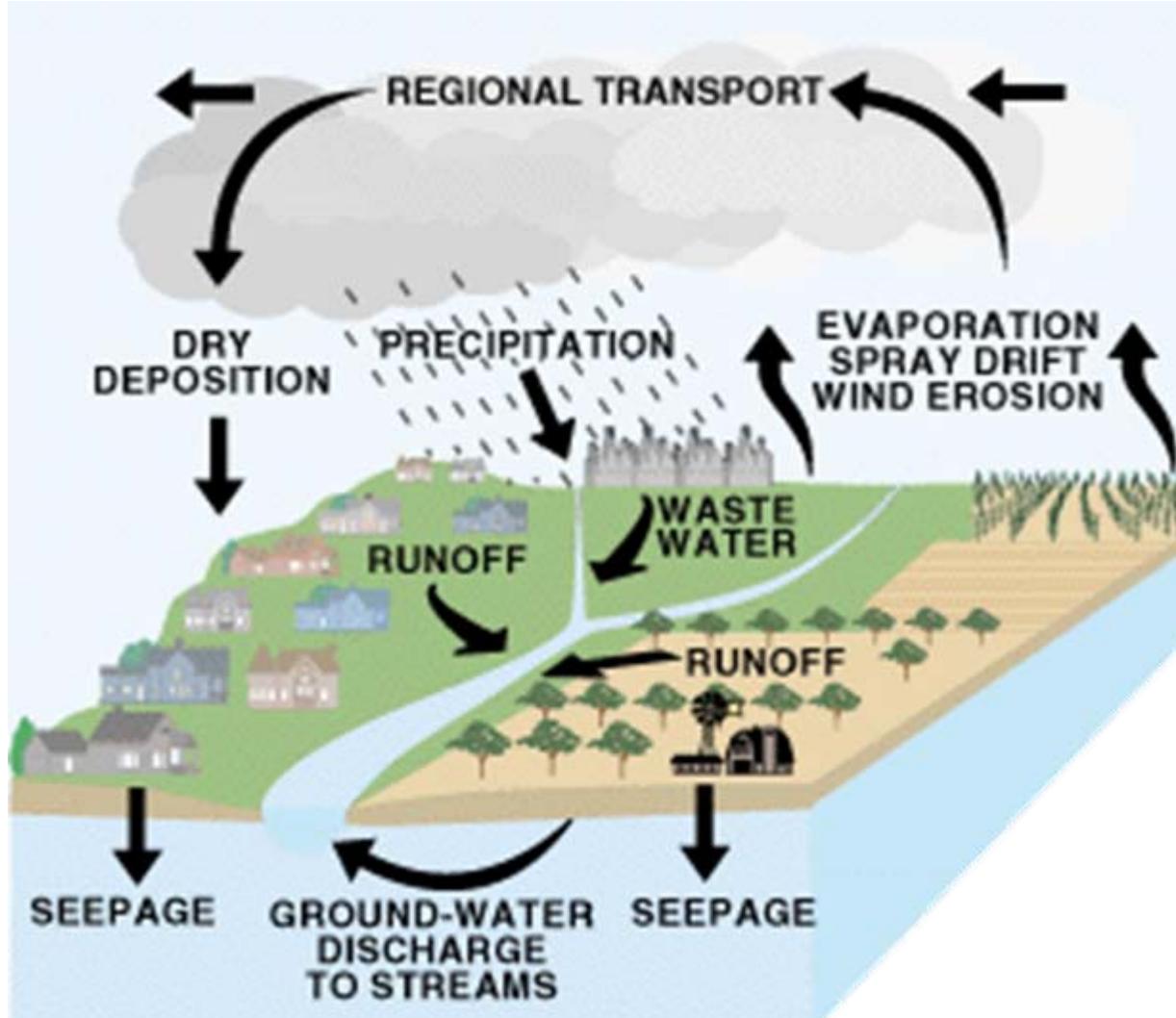


Predominant Contamination Problems

- 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



Pesticide Fate and Transport in Water



Specific Pesticide Challenges

- Misuse
 - Worker and consumer illnesses and health costs
- Overuse
 - Residues in exports which limit trade and market access
- Misuse
 - Future years needing more toxic and more costly pesticides
- Poor disposal
 - Future costs for cleanups and possible wide-spread illnesses



Awareness Challenge | Over purchasing



Awareness Challenge | Safe Handling



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



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



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



Applicable Regulations and Conventions

- Rotterdam Convention
- In-country regulations
 - Meaningful?
 - Sufficient?
 - Enforced?
- Markets influence farm and food practices



Hazardous Pesticide Management

- Integrated Pest Management (IMP)
- Use Best Management Practices (BMP)
 - 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
- BMPs and IPM may have high initial costs but allow for improved health and stronger export markets



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



Pesticide Packing for Transport and Deep Burial



Role and 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 and 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



References and Resources

- Agency, ANE, AFR guidelines
- Universities, agencies, ministries, USEPA, pesticide vendors
- Many useful websites:
 - www.usaid.gov/our_work/environment/compliance
 - www.ane-environment.net
 - www.encapafrika.org
 - www.dec.usaid.gov



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



Group Exercise

Background:

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.

In class 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?



Thank you

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