Collaboration and Communication in Risk Assessment Information

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Many Chemicals, Limited Resources

- People are exposed to far more chemicals than current risk assessment efforts can address
- Many government agencies, companies and organizations evaluate chemical risks, but often are not aware of what others are doing
- Resources are wasted when the same work is done by multiple agencies or groups
- **SOLUTION** -- Increase communication and collaboration by sharing information widely

Tools for Collaboration and Communication

Alliance for Risk Assessment *(ARA)* - A collaborative effort among organizations for solving public health risk assessment issues

***ITER* - International Toxicity Estimates for Risk Database**

RiskIE - Risk Information Exchange Database

ARA - Alliance for Risk Assessment
www.allianceforrisk.org

- Collaborative effort of a group of organizations that work together on projects to improve the process, efficiency, and quality of risk assessment.

- Member Organizations include: *TERA*, National Library of Medicine, Concurrent Technologies Corporation *(CTC)* and Noblis, Inc.

- The *ARA* provides a unique venue for governmental, industrial, environmental, and non-profit organizations to collaborate to produce high quality risk assessment science.

Examples of *ARA* Projects

Risk Document Development: Relative Source Contribution for RDX for U.S. Army

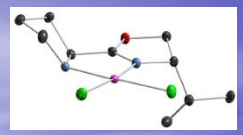
Training: Dose-Response Boot Camp

Research: Dietary arsenic exposure from soil for State of Texas and Hawaii Department of Health

Tools: *ITER* & RiskIE Databases

Peer Review: Review of 1,3-Butadiene Document Screening Level for State of Texas

Traditional risk assessment process



State Government

Federal Government

Environmental NGOs

Industry

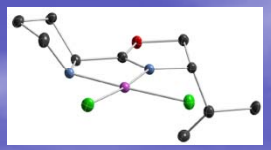
Risk assessment

Document Draft

Peer Reviews

Release to Public

Alliance for Risk Assessment Process



Risk Assessment

Document Draft

Peer Reviews

Release to Public

Global Risk Resources

ITER & RiskIE Databases

Toxicology Excellence for Risk Assessment

ITER

International Toxicity Estimates for Risk

On National Library of Medicine's TOXNET

- Risk value data in a side-by-side table format
- A synopsis that explains the underlying basis and rationale for each risk value and differences in risk values
- A link to each organization's website or source document
- A forum through which independent parties can share their peer reviewed risk values
- A resource to ensure that risk assessors and managers do not "miss" useful data

United States National Library of Medicine

TOXNET
Toxicology Data Network

TOXNET - Databases on toxicology, hazardous chemicals, environmental health, and toxic releases.

Select Database

- ChemIDplus
- HSDB
- TOXLINE
- CCRIS
- DART
- GENETOX
- IRIS
- ITER
- LactMed
- Multi-Database
- TRI
- Haz-Map
- Household Products
- TOXMAP

Additional Resource

- CPDB

Env. Health & Toxicology

VISIT SITE

Portal to environmental health and toxicology resources.

Support Pages

- Help
- TOXNET FAQ
- TOXNET Update Status
- Fact Sheet
- Database Description
- Training Manuals
- News

Search All Databases

arsenic | Search | Clear | Help

(e.g. asthma air pollution, ibuprofen fever, vinyl chloride)

References from Biomedical Literature

TOXLINE	Toxicology Literature Online	21524
DART	Developmental Toxicology Literature	623

Chemical, Toxicological, and Environmental Health Data

ChemIDplus	Chemical Identification/Dictionary	1
HSDB	Hazardous Substances Data Bank	356
CCRIS	Chemical Carcinogenesis Information	5
CPDB	Carcinogenic Potency Database	0
GENETOX	Genetic Toxicology Data	4
IRIS	Integrated Risk Information	6
ITER	International Toxicity Estimates for Risk	13
LactMed	Drugs and Lactation Database	0
TRI	Toxics Release Inventory	422
TOXMAP	Environmental Health e-Maps	Map It
Haz-Map	Occupational Exposure/Toxicology	Show me
Household Products	Health & Safety Information on Household Products	Show me

ITER - Summary Table for Arsenic, Inorganic

ARSENIC, INORGANIC

CASRN: 7440-38-2

For other data, click on the Table of Contents

Substance Identification/Summary Table:

Risk Values - Summary Table:

Summary Risk Table for: ARSENIC, INORGANIC

Risk Value Type \ Organization	ATSDR	Health Canada	IARC	IPRV	ITER PR	NSF Intl	RIVM	U.S.EPA
Noncancer Oral	√	√	--	--	√	--	√	√
Cancer Oral	√	√	√	--	--	--	--	√
Noncancer Inhalation	√	√	--	--	√	--	√	--
Cancer Inhalation	√	√	√	--	--	--	√	√

√ = *Chemical evaluated and ITER data online.*

Arsenic, Inorganic – Noncancer Oral

Risk Data - Noncancer Oral:

ITER Noncancer Oral Risk Table for: ARSENIC, INORGANIC								
Risk Value Parameter\ Organization	ATSDR	Health Canada	IARC	IPRV	ITER PR	NSF Intl	RIVM	U.S.EPA
Risk Value Name	chronic MRL	NA	--	--	NA	--	TDI	RfD
Risk Value*	3E-4	NA	--	--	see below	--	1E-3	3E-4
Year	2007	1992	--	--	1999	--	2000	1993
Basis (Experimental)*	NOAEL 0.0008	NA	--	--	NA	--	NOAEL 0.0021	NOAEL 0.0008
Basis (Adjusted)*	NA	NA	--	--	NA	--	NA	NA
Uncertainty Factor	3	NA	--	--	NA	--	2	3
Critical Organ or Effect	skin	NA	--	--	NA	--	skin	skin
Species	human	NA	--	--	NA	--	human	human
Study	Tseng et al., 1968; Tseng, 1977	NA	--	--	NA	--	Health Council of The Netherlands, 1993	Tseng, 1977; Tseng et al., 1968
View Specifics:	Click here	Click here	--	--	Click here	--	Click here	Click here

**In mg/kg body weight per day, unless otherwise specified.*

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Synopsis Describes Differences

Synopsis:

ATSDR, Health Canada, RIVM, and U.S. EPA have evaluated the noncancer oral toxicity data for inorganic **arsenic**. Health Canada did not derive a risk estimate for noncancer toxicity since carcinogenicity is considered the critical endpoint. Both EPA and ATSDR risk values are based on the same study and use the same choice of critical effect, NOAEL and uncertainty factor.

RIVM derived a tolerable daily intake (TDI) of 0.001 mg/kg-day for critical effects on the skin in humans. This value is based on a NOAEL of 0.0021 mg/kg-day that was derived by Vermeire et al. (1991) from the World Health Organization provisional maximum tolerable weekly intake (PTWI) of organic **arsenic** of 15 mg/kg bw/week for adults of 70 kg of body weight. This PTWI was derived from a LOAEL of chronic intake of 100 ug **arsenic**/L in drinking water by humans, assuming a daily intake of drinking water of 1.5 L/day. RIVM used uncertainty factor of 2 to compensate for observation errors in an epidemiological study. Thus, the TDI is derived as follows: (100 ug **arsenic**/L x 1.5 L/day) / (70 kg) / (2) = 1 ug/kg-day (0.001 mg/kg-day).

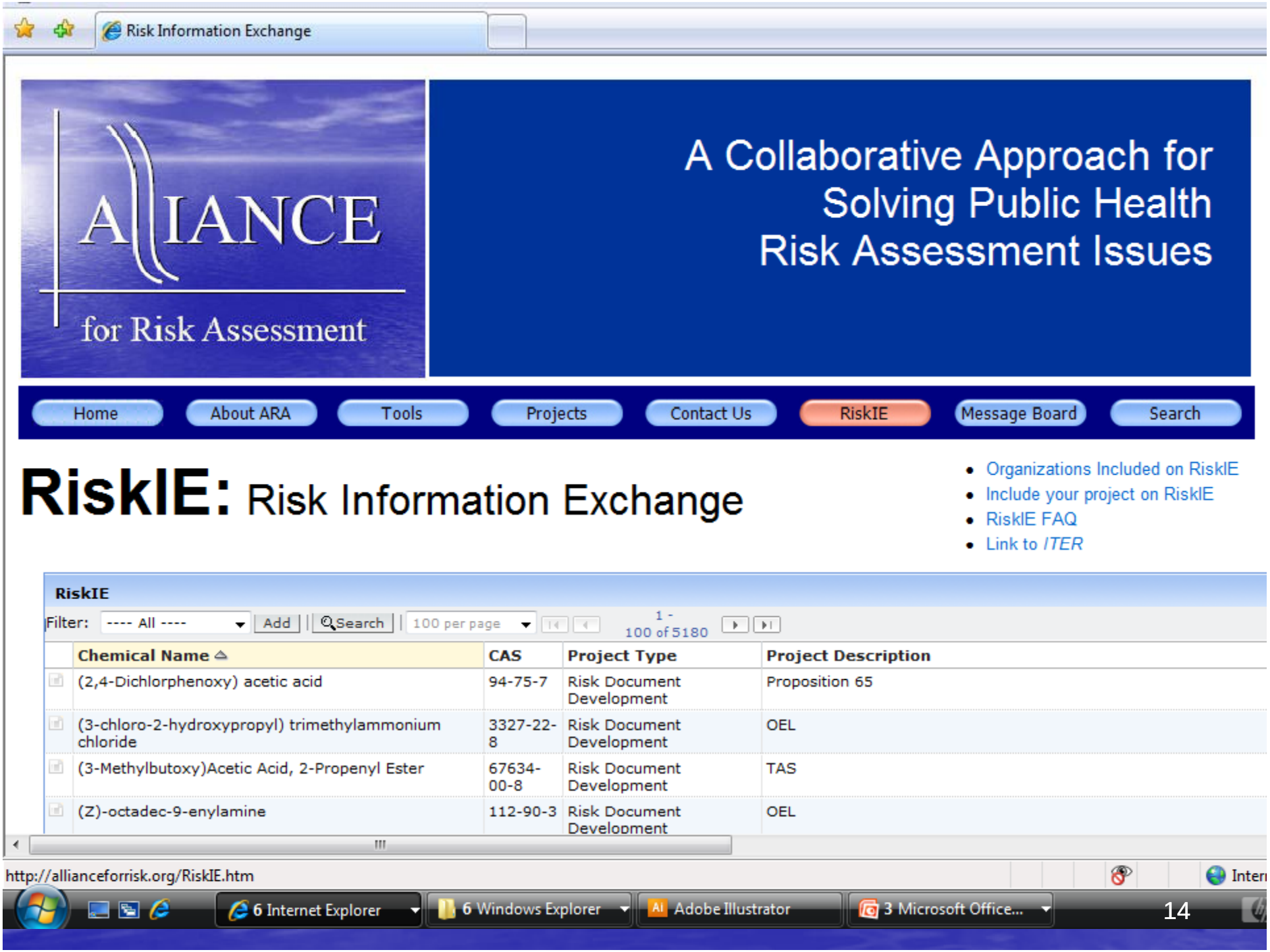
Elf Atochem North America, Inc. (under the ITER PR column) has evaluated the potential developmental effects of inorganic **arsenic**. An expert panel concluded that at the experimental oral and inhalation doses tested, which generated frank maternal toxicity and lethality, no prenatal structural effects were induced in laboratory animals. By the oral route (gavage and diet), developmental toxicity (post-implantation loss and/or decreased fetal weight) was seen only occasionally and at the highest dose level, which also induced maternal toxicity. An independent peer review panel, through the TERA ITER Peer Review program, has reviewed and reached consensus on the Elf Atochem work, thereby qualifying it for inclusion in this database.

RiskIE

Risk Information Exchange

www.allianceforrisk.org/riskIE.htm

- A Database to Communicate In-Progress Risk & Toxicity Assessments
- Includes over 5100 projects being conducted by more than 20 organizations representing 8 countries
- Scheduled to join NLM's TOXNET in 2008


Risk Information Exchange
ALLIANCE
for Risk Assessment
A Collaborative Approach for Solving Public Health Risk Assessment Issues
Home
About ARA
Tools
Projects
Contact Us
RiskIE
Message Board
Search
RiskIE: Risk Information Exchange
Organizations Included on RiskIE
Include your project on RiskIE
RiskIE FAQ
Link to ITER
RiskIE
Filter: ---- All ----
Add
Search
100 per page
1 - 100 of 5180
Chemical Name
CAS
Project Type
Project Description
(2,4-Dichlorphenoxy) acetic acid
94-75-7
Risk Document Development
Proposition 65
(3-chloro-2-hydroxypropyl) trimethylammonium chloride
3327-22-8
Risk Document Development
OEL
(3-Methylbutoxy)Acetic Acid, 2-Propenyl Ester
67634-00-8
Risk Document Development
TAS
(Z)-octadec-9-enylamine
112-90-3
Risk Document Development
OEL
http://allianceforrisk.org/RiskIE.htm
6 Internet Explorer
6 Windows Explorer
Adobe Illustrator
3 Microsoft Office...
14

RiskIE Example Entry

Chemical: Arsenic

CAS: 7440-38-2

Project Type: Research

Status: In progress

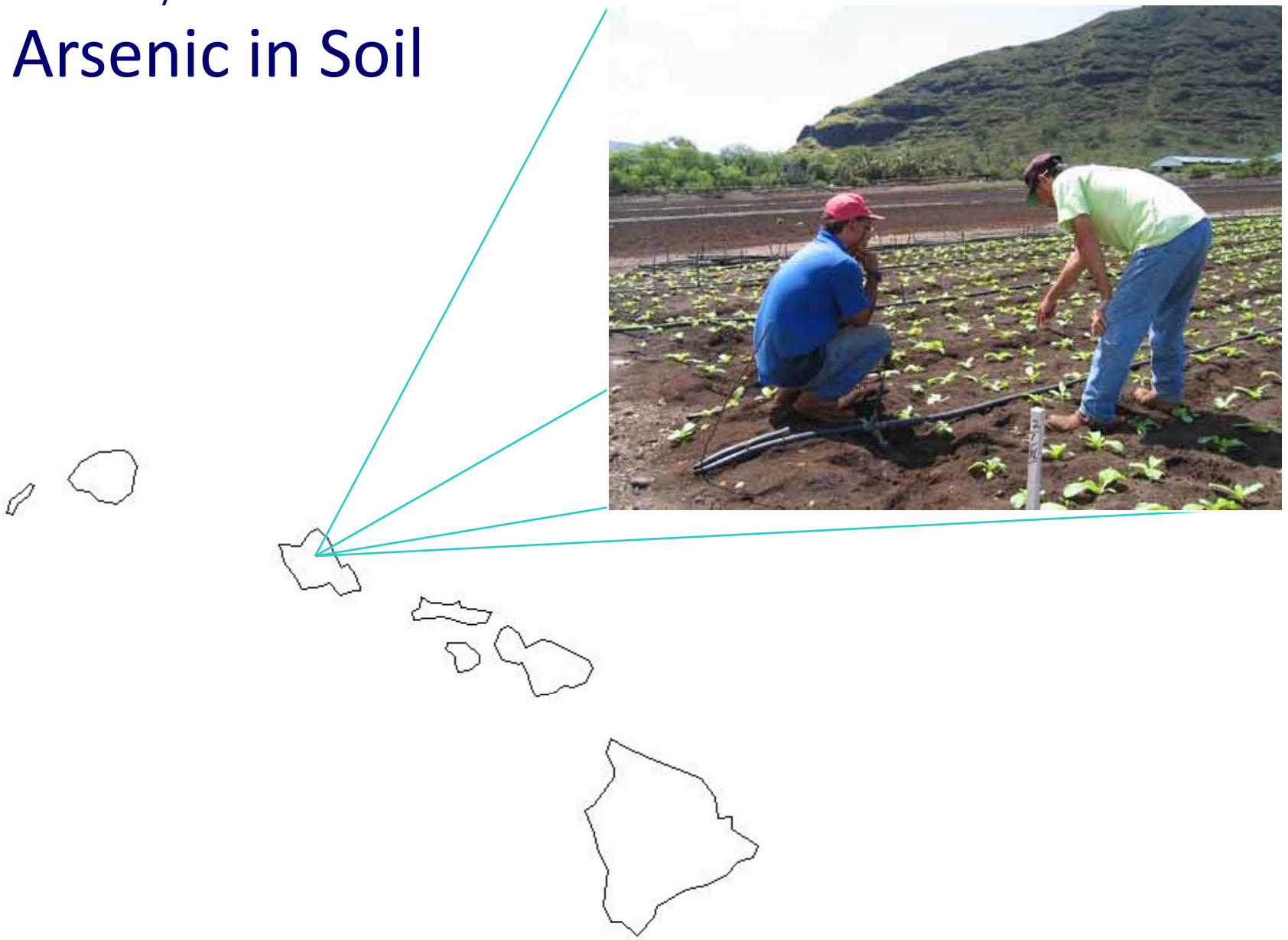
Contact: Roger Brewer

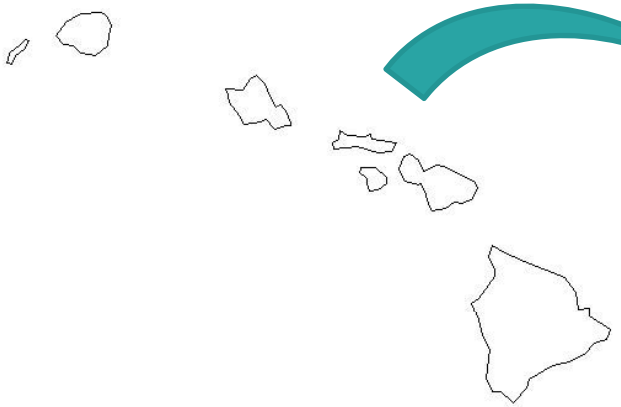
Organization: Hawai'i Department of Health Hazard Evaluation and Emergency Response 919 Ala Moan Blvd, Room 206 Honolulu, HI roger.brewer@doh.hawaii.gov 1-808-586-4328

Project Description: Compilation of information related to arsenic toxicity in the range of dietary exposure (e.g., up to 100 ug/day). Is there a threshold for arsenic toxicity? Are the published toxicity factors realistic at the range of typical dietary exposure, especially for Pacific Islander and Asian diets high in rice, chicken and seafood?

Case Study:

Arsenic in Soil





ALLIANCE for Risk Assessment

StateHELP

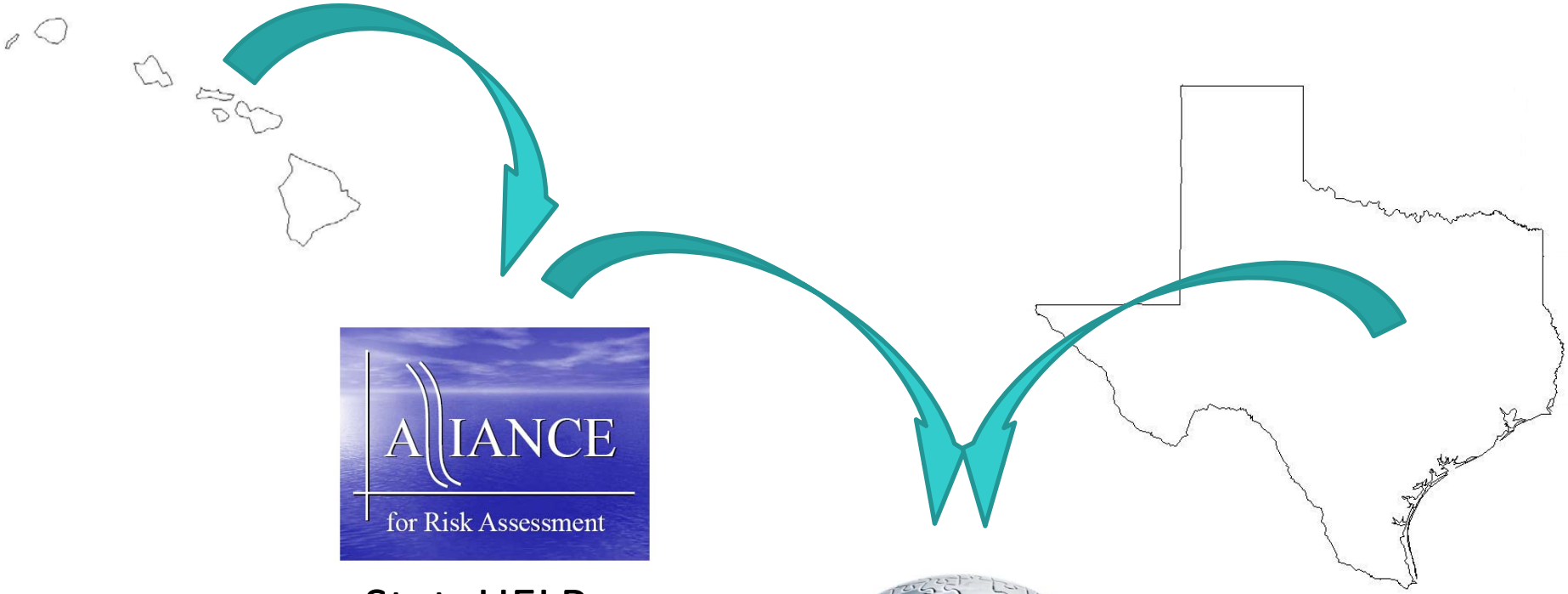
RiskIE

Toxicology Excellence for Risk Assessment

Meanwhile in Texas…

RiskIE

Toxicology Excellence for Risk Assessment



StateHELP

RiskIE

Toxicology Excellence for Risk Assessment

Questions?

- **Alliance for Risk Assessment / RiskIE**
  - http://allianceforrisk.org/
  - http://www.allianceforrisk.org/RiskIE.htm
  - Oliver Kroner, kroner@tera.org
    513-542-7475 ext 19
- ***ITER***
  - www.tera.org/iter or http://toxnet.nlm.nih.gov
  - Andrea Wullenweber, wullenweber@tera.org
    512-863-5441