

# Factors affecting arsenic accumulation and speciation in rice

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Bioavailability

Sources of As to rice

Between & within field variation

As location in grain

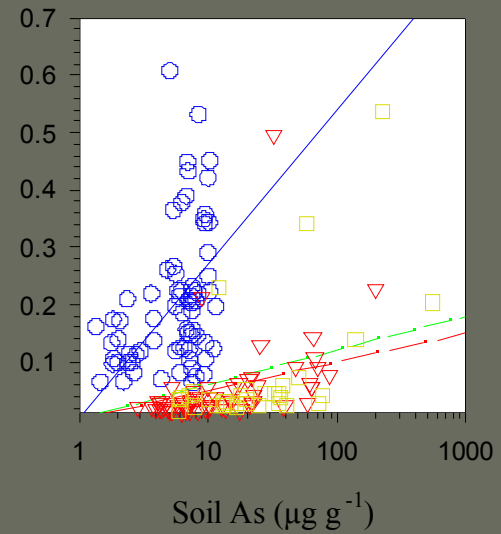
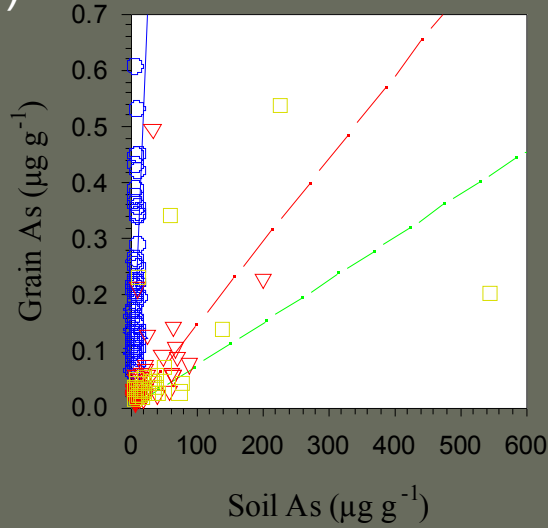
Human bioavailability

Rice consumption rates

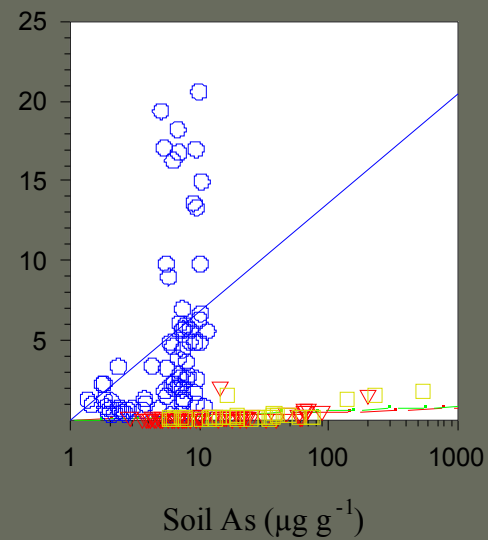
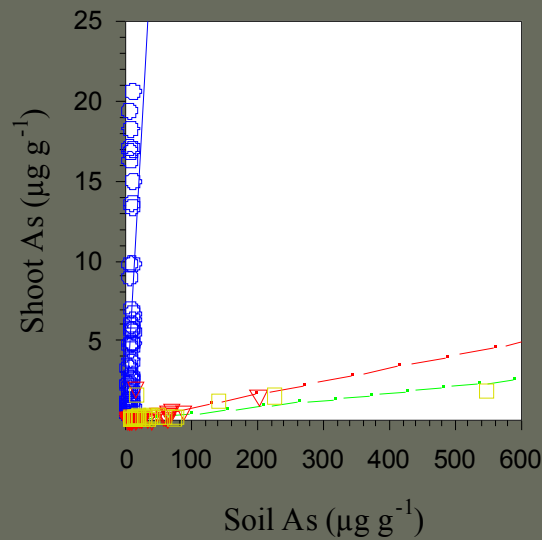
Cancer risks

# SOIL - SHOOT - GRAIN ARSENIC TRANSFER

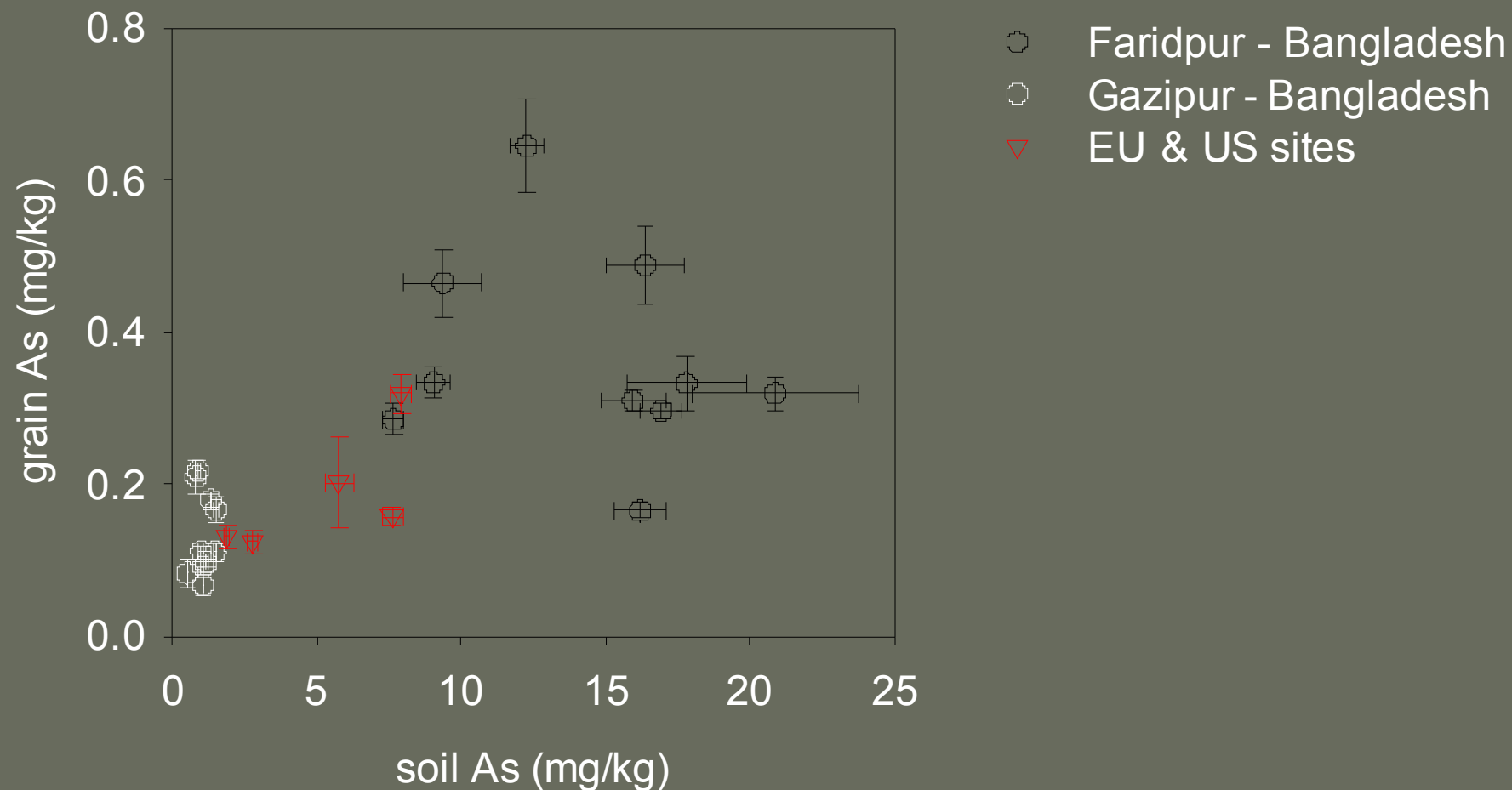
(FIELD SURVEY)



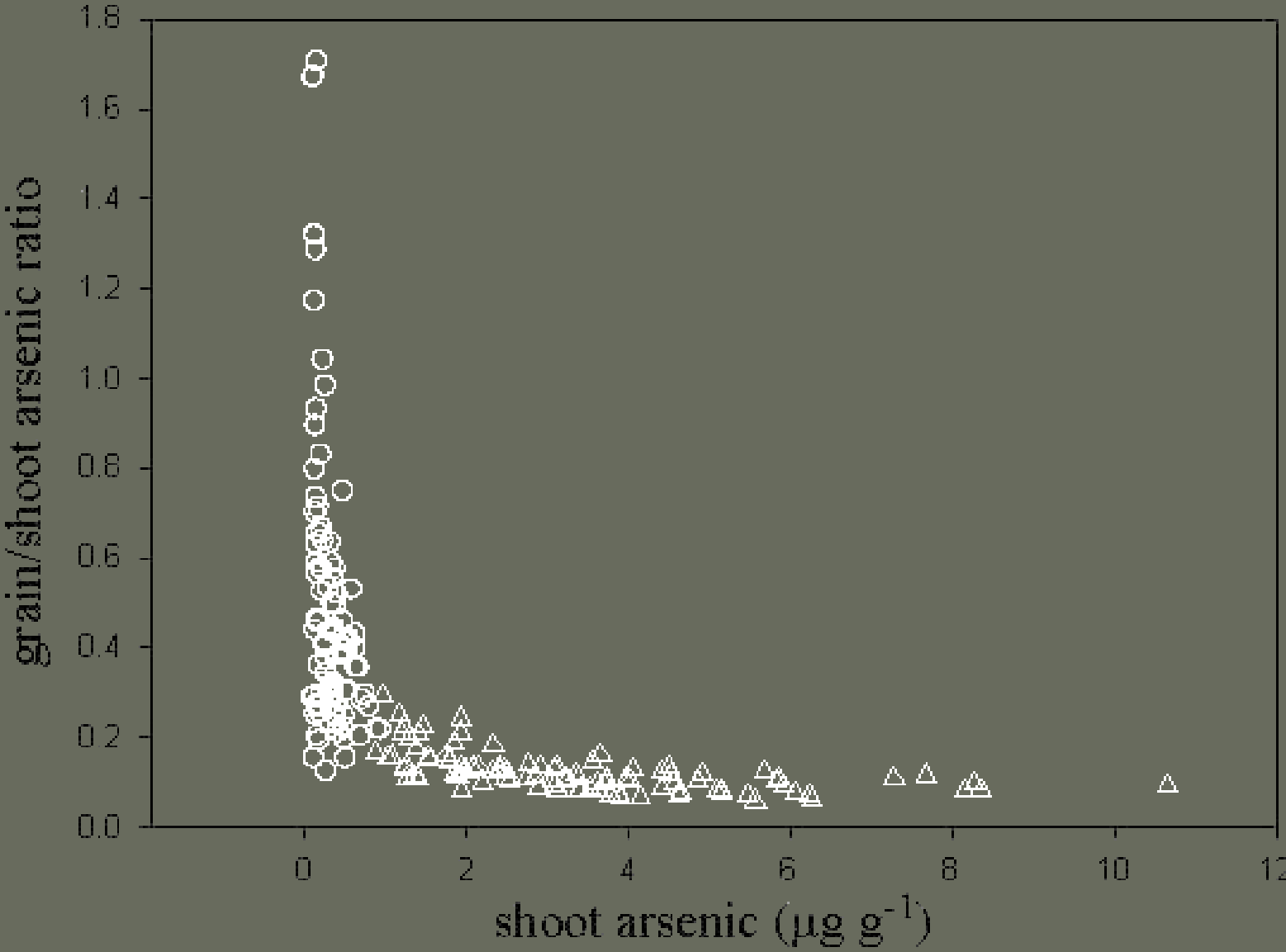
- rice
- ▽ wheat
- barley
- Plot 1 Regr



See talk by Paul Williams  
explaining why As levels get  
so high in rice grain

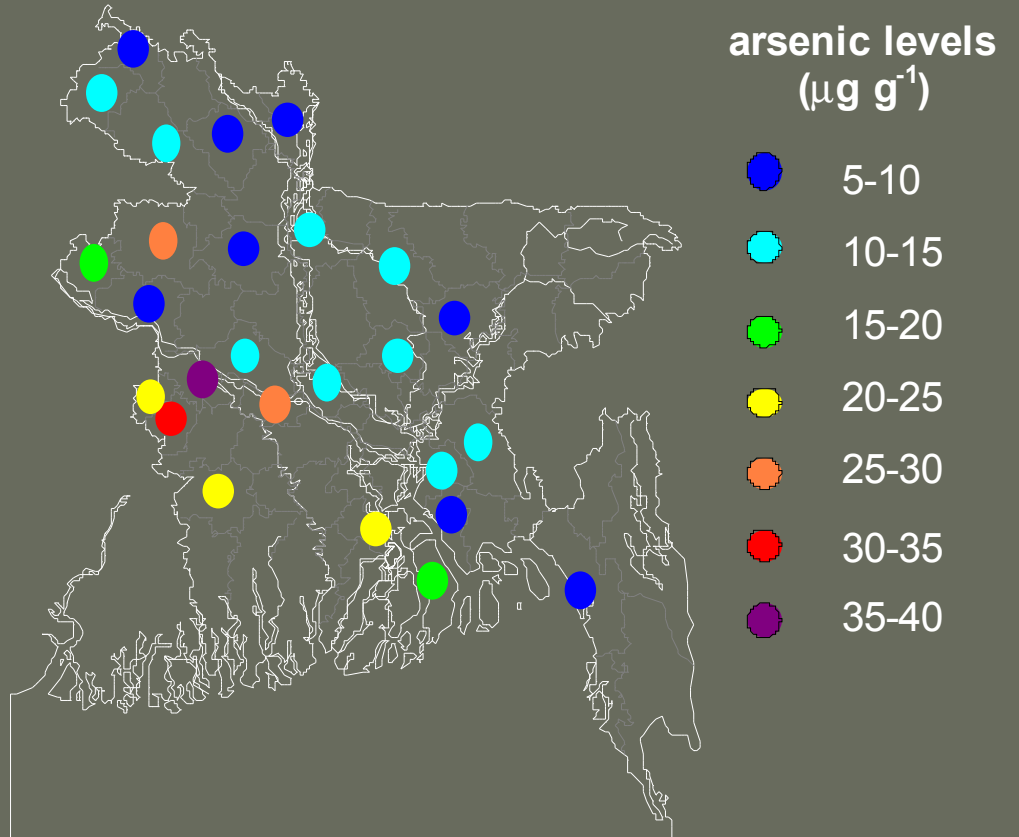


# SHOOT – GRAIN ARSENIC EXPORT

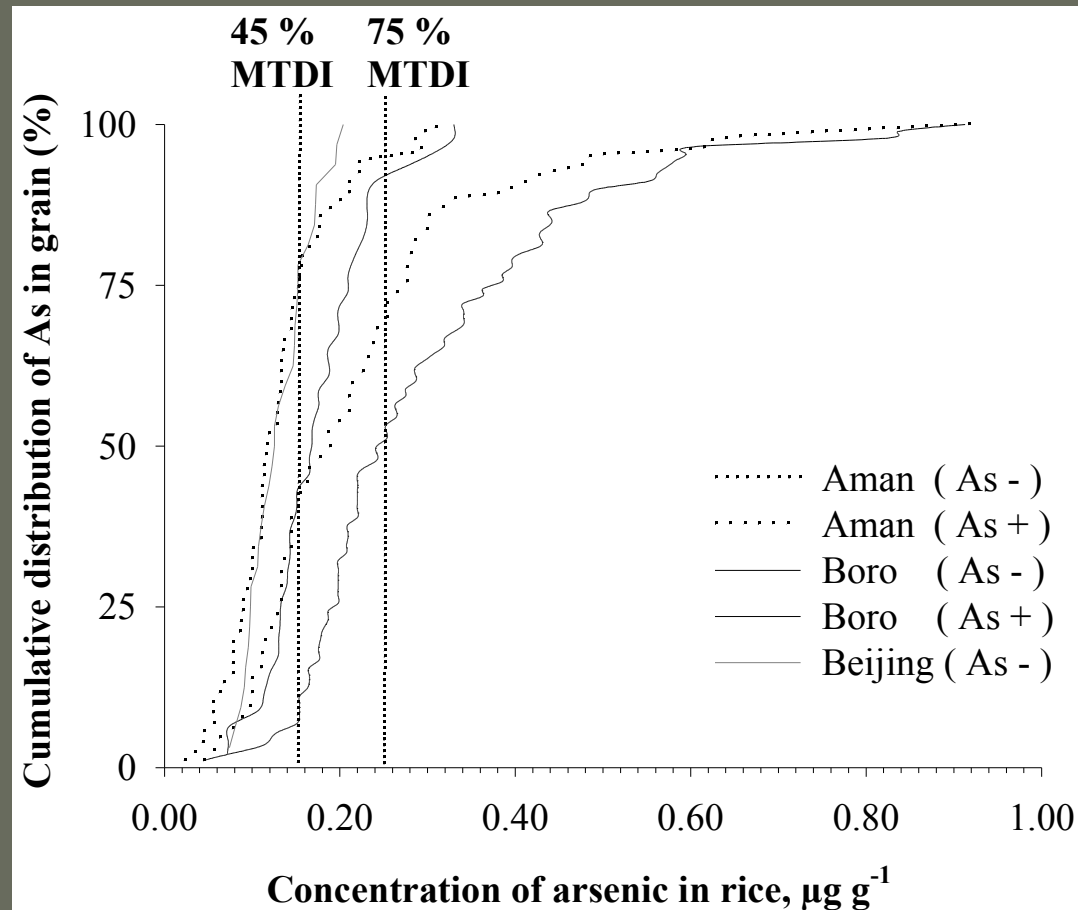




# PADDY FIELD SOIL SURVEY

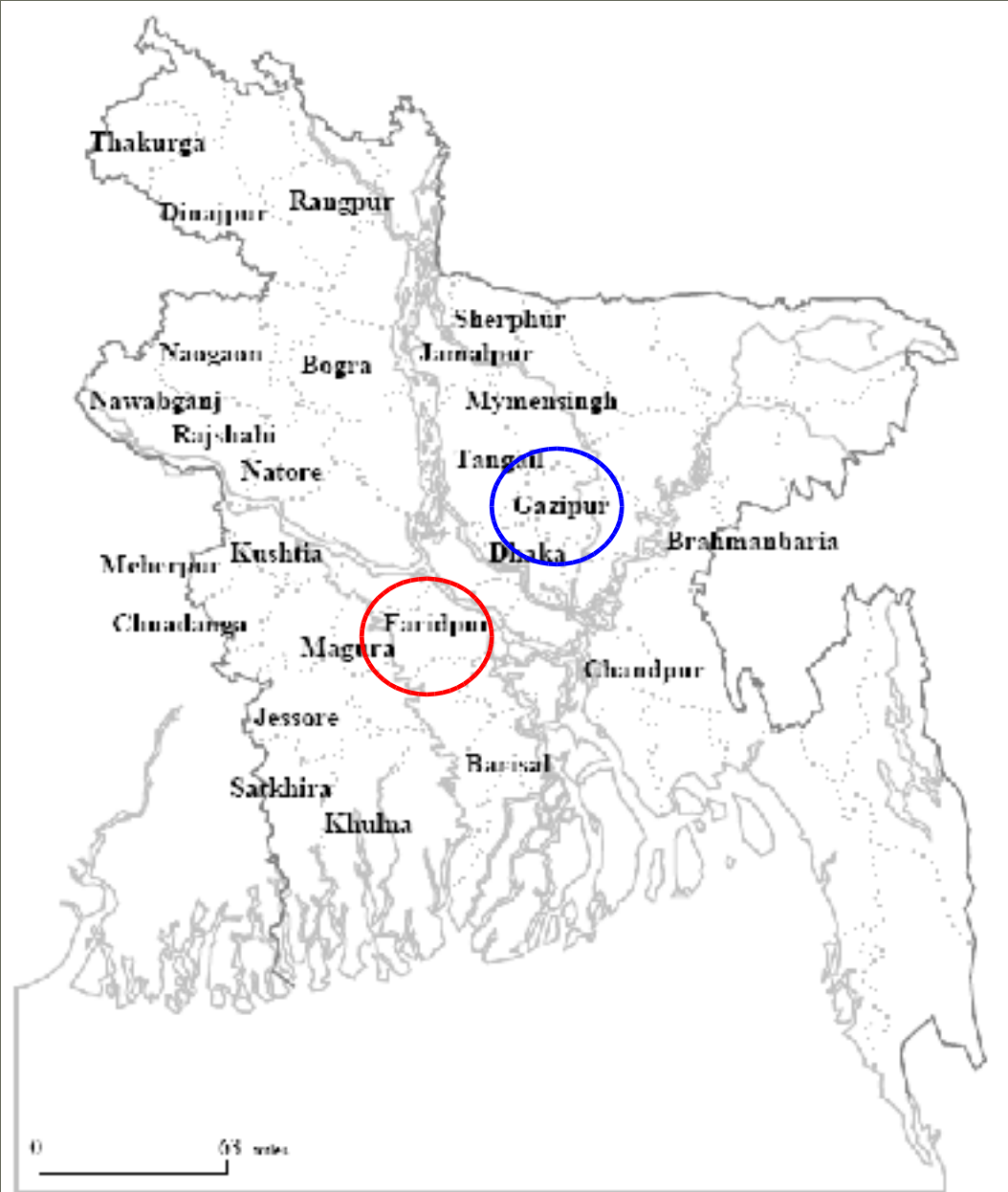


# Arsenic levels in Bangladesh rice





# PADDY FIELD SOIL SURVEY

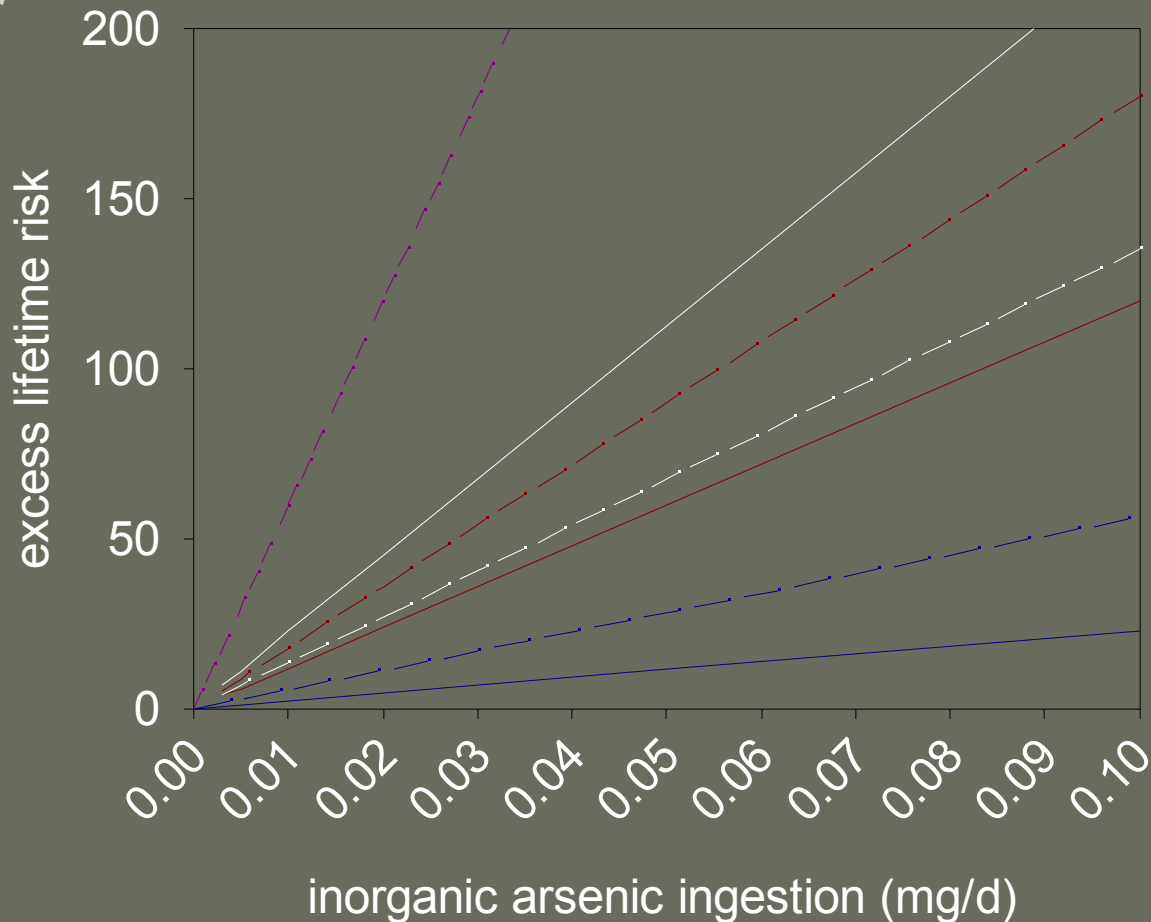
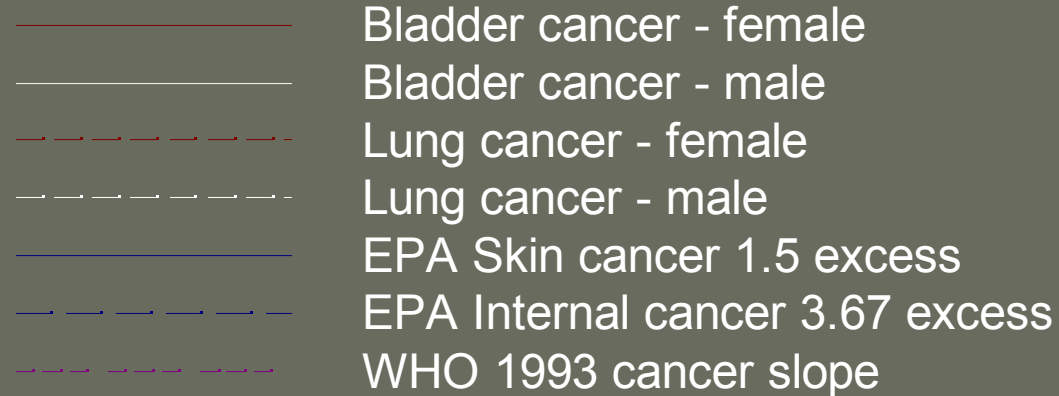


# Cancer risks posed by rice in diet

# EPA, NRC & WHO

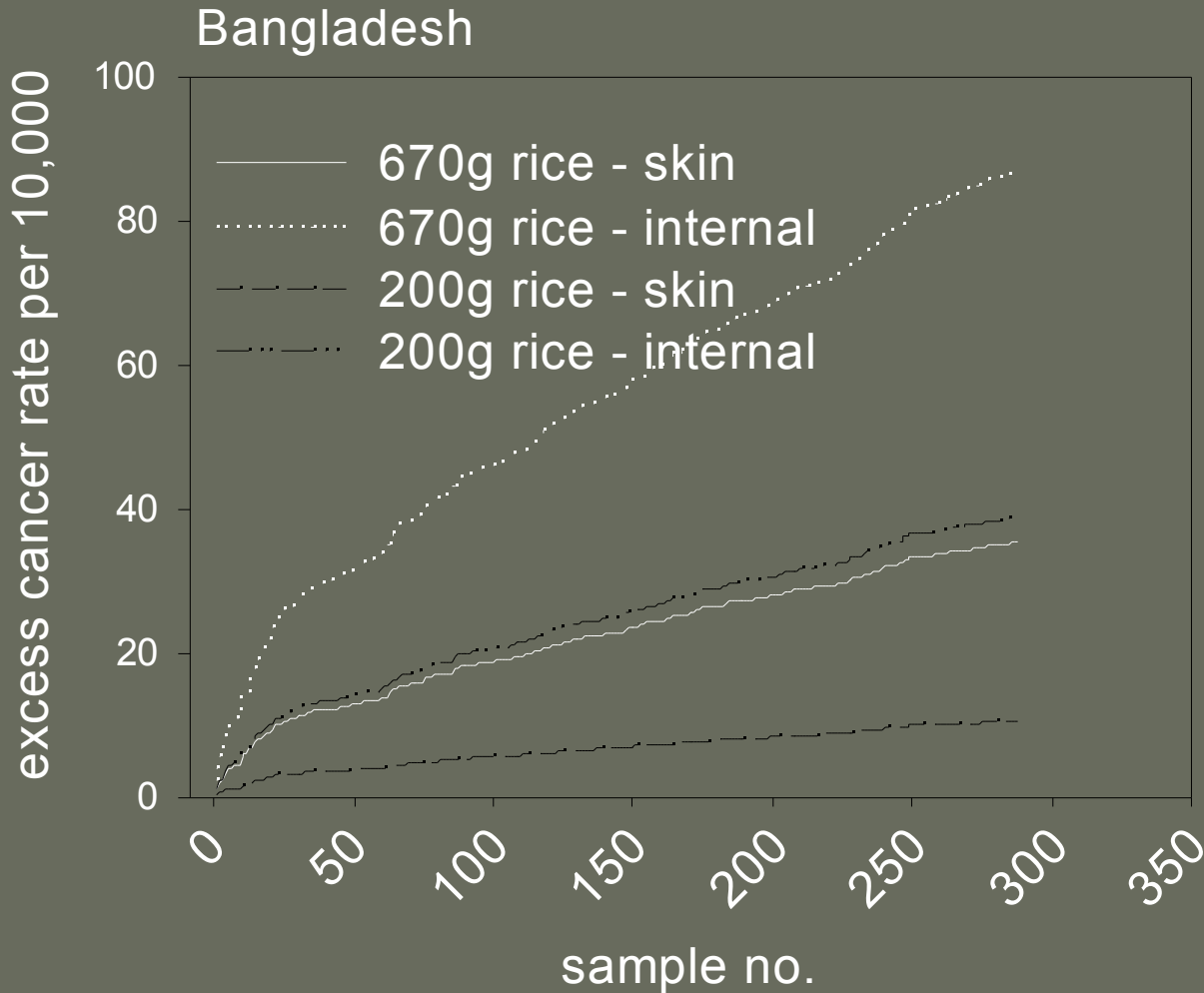
## cancer slopes:

excess lifetime risk per  
10,000 based on  
consumption of  
1 L/d water



# Cancer risks from inorganic arsenic in rice:

US EPA target for any given source should not exceed a cancer risk of 1 in 10,000



# Conclusions

- As is elevated in rice grain
- Much of this is inorganic
- Levels present cancer risk