
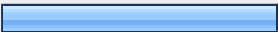



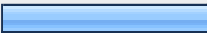
Land Contamination Regulatory Framework in Selected Asia Pacific Countries

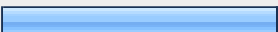
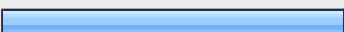
1. Please provide the following information			Response Percent	Response Count
Name:	<input type="text"/>		100.0%	10
Position:	<input type="text"/>		100.0%	10
Agency/Department:	<input type="text"/>		100.0%	10
Address:	<input type="text"/>		90.0%	9
City/Town:	<input type="text"/>		90.0%	9
ZIP & Country:	<input type="text"/>		90.0%	9
Email Address:	<input type="text"/>		90.0%	9
Phone Number:	<input type="text"/>		90.0%	9
Fax Number:	<input type="text"/>		90.0%	9
			answered question	10
			skipped question	5

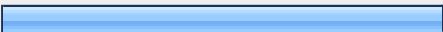
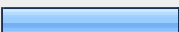
2. Is there any law or regulation specific to land contamination in your country?			Response Percent	Response Count
Yes	<input type="text"/>		62.5%	5
No	<input type="text"/>		37.5%	3
If yes, please provide the title of the land contamination laws/regulations and web link to the relevant documents if available.				4
			answered question	8
			skipped question	7

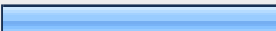
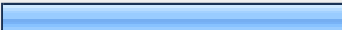
3. Is there a defined soil and groundwater quality standard or clean up standard available in your country?			Response Percent	Response Count
Yes			55.6%	5
No			44.4%	4
If yes, please provide the title of soil and groundwater standards. Please provide web link to the relevant documents if available.				4
answered question				9
skipped question				6

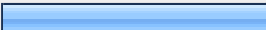

4. What are the drivers to establish contaminated land management legislations in your country?				Response Count
	Yes	No		
a. Public outcry due to major land contamination incidents	50.0% (1)	50.0% (1)		2
b. Initiatives from private industry, e.g. corporate requirements from parent company	0.0% (0)	100.0% (2)		2
c. Government directives or mandate	100.0% (3)	0.0% (0)		3
d. Scarcity of land due to urbanization	0.0% (0)	0.0% (0)		0
e. Amendments or improvement of the existing legislation	100.0% (2)	0.0% (0)		2
		Other (please specify)		2
answered question				6
skipped question				9



5. Is your agency/department responsible for implementing land contamination laws/regulations?			Response Percent	Response Count
Yes			66.7%	6
No			33.3%	3
If no, which agency or department is the custodian of the land contamination laws/regulations in your country?				1
answered question				9
skipped question				6

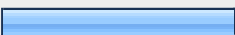

6. If there is no regulatory framework available to address contaminated land issues, is there a plan to establish a country-specific contaminated land framework?			Response Percent	Response Count
Yes			44.4%	4
No			55.6%	5
If yes, could you please elaborate on the plan?				4
answered question				9
skipped question				6

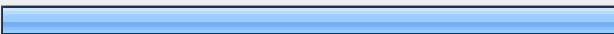
7. Is there a specific clause requiring land contamination clean up under the existing environmental legislation?			Response Percent	Response Count
Yes			71.4%	5
No			28.6%	2
If yes, please provide the title of regulations and clauses and web link to relevant documents if available.				5
answered question				7
skipped question				8

8. Are there any regulatory requirements for self-reporting of land contamination by the polluter?		
	Response Percent	Response Count
Yes 	44.4%	4
No 	55.6%	5
If yes, please provide the title of regulations and clauses and web link to relevant documents if available.		2
	answered question	9
	skipped question	6

9. Is there any provision that requires public notification or reporting of land contamination cases to the relevant authorities?		
	Response Percent	Response Count
Yes 	42.9%	3
No 	57.1%	4
If yes, please provide the title of regulations and clauses and web link to relevant documents if available.		3
	answered question	7
	skipped question	8

10. Is there any specific punitive clause for land contamination in the existing legislation?		
	Response Percent	Response Count
Yes 	57.1%	4
No 	42.9%	3
If yes, please provide the title of regulations and clauses and web link to relevant documents if available.		5
	answered question	7
	skipped question	8

11. Are there any specific requirements on the qualifications of competent persons involved with implementing contaminated land management activities?			Response Percent	Response Count
Yes			37.5%	3
No			62.5%	5
<i>answered question</i>				8
<i>skipped question</i>				7

12. Does the environmental law/regulation adopt "Polluter Pays Principle"?			Response Percent	Response Count
Yes			100.0%	8
No			0.0%	0
<i>answered question</i>				8
<i>skipped question</i>				7

13. Who will be responsible for cleaning up land contamination if the polluter CAN be identified?				Response Count
	Yes	No		
a. Polluter	100.0% (8)	0.0% (0)		8
b. Land owner who owns the land contaminated by the polluter	60.0% (3)	40.0% (2)		5
c. Government	50.0% (2)	50.0% (2)		4
<i>answered question</i>				8
<i>skipped question</i>				7

14. Who will be responsible for cleaning up land contamination if the polluter CANNOT be identified or the polluter is bankrupt?			
	Yes	No	Response Count
a. Land owner who owns the land contaminated by the polluter	50.0% (2)	50.0% (2)	4
b. Government	75.0% (6)	25.0% (2)	8
		Other (please specify)	0
	<i>answered question</i>		8
	<i>skipped question</i>		7

15. What are the funding sources for land contamination clean up initiated by the government in the event no polluter can be identified?			
	Yes	No	Response Count
a. Government special budget/ad hoc fund	100.0% (6)	0.0% (0)	6
b. Public environmental fund contributed by the industries	50.0% (2)	50.0% (2)	4
c. Public loan from other government agencies	66.7% (2)	33.3% (1)	3
d. Private loan from financial institutions	33.3% (1)	66.7% (2)	3
e. International aid for environmental restoration/improvement	75.0% (3)	25.0% (1)	4
		Other (please specify)	1
	<i>answered question</i>		7
	<i>skipped question</i>		8

16. Under what circumstance will a clean up or remediation of land contamination be required in your country?			
	Yes	No	Response Count
a. When there is evidence of impact or imminent impact to human health.	100.0% (7)	0.0% (0)	7
b. When there is evidence of impact or imminent impact to the environment.	71.4% (5)	28.6% (2)	7
c. When there is noticeable chemical or product in the soil and groundwater? ("noticeable" is defined as impacts that can be observed visually or olfactorily)	66.7% (4)	33.3% (2)	6
d. When environmental media concentrations exceed the applicable soil and groundwater standards?	33.3% (2)	66.7% (4)	6
	<i>answered question</i>		7
	<i>skipped question</i>		8

17. To what extent would contaminated land cleaned up (remediated) under the applicable regulation?			
	Yes	No	Response Count
a. To pre-existing or baseline condition	66.7% (2)	33.3% (1)	3
b. To a level protective of human health and ecology	66.7% (2)	33.3% (1)	3
c. To a prescribed standard	100.0% (3)	0.0% (0)	3
d. Not defined	100.0% (4)	0.0% (0)	4
	<i>answered question</i>		7
	<i>skipped question</i>		8


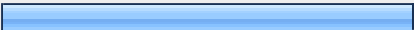
18. Does the law require a post-remediation monitoring program to ensure compliance with clean-up requirements or prescribed standards?			
		Response Percent	Response Count
Yes	<input type="text"/>	50.0%	4
No	<input type="text"/>	50.0%	4
<i>answered question</i>			8
<i>skipped question</i>			7

19. If possible, please indicate the number of contaminated sites in your country by type:			
	Response Average	Response Total	Response Count
a. Number of closed landfills or dumping grounds	5.00	5	1
b. Number of manufacturing/industrial sites	2.00	2	1
c. Number of petrochemical industry sites	0.50	1	2
d. Number of retail gasoline stations	0.00	0	1
e. Number of former mining sites	1.00	2	2
f. Number of illegal land disposal sites (hazardous waste)	5.00	10	2
g. Other land use, pls specify	0.00	0	1
h. Unknown	0.00	0	1
<i>answered question</i>			2
<i>skipped question</i>			13

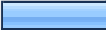
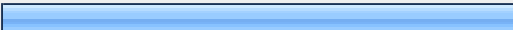
20. If possible, please indicate the number of contaminated sites in your country that have been cleaned up by type:

	Response Average	Response Total	Response Count
a. Number of closed landfills or dumping grounds	2.00	2	1
b. Number of manufacturing industrial sites	0.00	0	1
c. Number of petrochemical industries	0.00	0	1
d. Number of retail gasoline stations	0.00	0	1
e. Number of former mining land	0.00	0	1
f. Number of illegal land disposal (hazardous waste)	0.00	0	1
g. Other land use, pls specify	0.00	0	1
h. Unknown	0.00	0	1
answered question			1
skipped question			14


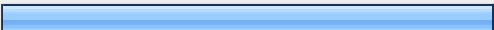
21. Does the department/agency responsible for the implementing the land contamination laws/regulations maintain a database of all contaminated sites?

	Response Percent	Response Count
Yes 	33.3%	1
No 	66.7%	2
Please specify the type of database maintained (Manual Filing / Customized Software / GIS etc.):-		2
answered question		3
skipped question		12

22. Does your department/agency or the custodian of the land contamination regulations maintain a national prioritization list (NPL) that prioritizes government-funded clean up activities?

	Response Percent	Response Count
Yes 	16.7%	1
No 	83.3%	5
<i>answered question</i>		6
<i>skipped question</i>		9

23. If yes, is the NPL available for public access?

	Response Percent	Response Count
Yes 	20.0%	1
No 	80.0%	4
<i>answered question</i>		5
<i>skipped question</i>		10

24. In addition to in-house expertise, what are the human and technical resources are available in responding to a land contamination incident in your country?

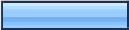
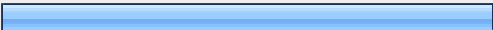
	Yes	No	Response Count
a. Other governmental agencies	80.0% (4)	20.0% (1)	5
b. Universities / research institutes	100.0% (4)	0.0% (0)	4
c. External consultants / consulting firms	100.0% (4)	0.0% (0)	4
d. Industry / Industry association	75.0% (3)	25.0% (1)	4
e. NGOs	60.0% (3)	40.0% (2)	5
		Other (please specify)	0
<i>answered question</i>			5
<i>skipped question</i>			10

25. Are there any hazardous waste treatment facilities available in your country for treatment and disposal of materials generated by remediation activities?			Response Percent	Response Count
Yes			100.0%	5
No			0.0%	0
			<i>answered question</i>	5
			<i>skipped question</i>	10

26. If yes to Question 25., are the facilities capable of handling the following contaminants:-			
	Yes	No	Response Count
a. Metal waste immobilization, stabilization or solidification	100.0% (5)	0.0% (0)	5
b. Hazardous waste incinerator	100.0% (4)	0.0% (0)	4
c. Engineered landfill	100.0% (5)	0.0% (0)	5
		Other (please specify)	0
			<i>answered question</i>
			5
			<i>skipped question</i>
			10

27. What are the remediation technologies available in your country?			
	Yes	No	Response Count
a. Soil Vapor Extraction (SVE) / Multiple Phase Extraction (MPE)	50.0% (1)	50.0% (1)	2
b. Pump & Treat (P&T)	75.0% (3)	25.0% (1)	4
c. Chemical Oxidation or Injection (Chemox)	100.0% (5)	0.0% (0)	5
d. Bioremediation	80.0% (4)	20.0% (1)	5
e. Enhanced Natural Attenuation (NA)	50.0% (1)	50.0% (1)	2
f. Permeable Reactive Barriers (PRB)	66.7% (2)	33.3% (1)	3
		Other (please specify)	1
		<i>answered question</i>	5
		<i>skipped question</i>	10

28. Do you think there are sufficient resources available to manage contaminated land issues in your country?			
	Yes	No	Response Count
a. In-house expertise or expertise from other governmental agencies	66.7% (4)	33.3% (2)	6
b. Consultants / service providers	60.0% (3)	40.0% (2)	5
d. Hazardous waste treatment and disposal facilities	66.7% (4)	33.3% (2)	6
e. Contaminated land inventory database	0.0% (0)	100.0% (5)	5
f. Funding for clean up or remediation	0.0% (0)	100.0% (5)	5
		<i>answered question</i>	6
		<i>skipped question</i>	9

29. Do you think there are sufficient regulatory tools available to manage land contamination issues in your country?			Response Percent	Response Count
Yes			20.0%	1
No			80.0%	4
If not, what regulatory tools (regulations/guidelines/standards) would you recommend to incorporate into the existing regulatory framework?				4
answered question				5
skipped question				10

30. What are the challenges in managing contaminated land issues in your country?				Response Count
	Yes	No		
a. Lack of regulatory framework specific to land contamination	66.7% (4)	33.3% (2)		6
b. Lack of in-house resources to implement & enforce	60.0% (3)	40.0% (2)		5
c. Lack of external resources capable of managing land contamination	60.0% (3)	40.0% (2)		5
d. Lack of public awareness	83.3% (5)	16.7% (1)		6
e. Lack of hazardous waste treatment & disposal infrastructure	40.0% (2)	60.0% (3)		5
f. Not an immediate plan for the government	50.0% (3)	50.0% (3)		6
g. Lack of political will from the government	40.0% (2)	60.0% (3)		5
		Other (please specify)		1
answered question				6
skipped question				9

31. What are the most pressing issues related to land contamination that you need to address in your country? Please rank each of these issues accordingly.

	High	Medium	Low	Response Count
a. Establishing a legal and policy framework	66.7% (4)	16.7% (1)	16.7% (1)	6
b. Amendment on existing legal and policy framework	50.0% (3)	33.3% (2)	16.7% (1)	6
c. Setting an applicable standards	50.0% (3)	33.3% (2)	16.7% (1)	6
d. Capacity building	66.7% (4)	16.7% (1)	16.7% (1)	6
e. Establishing a Contaminated Land Inventory Database	60.0% (3)	20.0% (1)	20.0% (1)	5
f. Raising public awareness	50.0% (3)	33.3% (2)	16.7% (1)	6
g. Stakeholder engagement	50.0% (3)	33.3% (2)	16.7% (1)	6
	<i>answered question</i>			6
	<i>skipped question</i>			9

32. In addition to the issues stated in question 31, are there any other most pressing issues on land contamination in your country?

		Response Percent	Response Count
Issue 1		100.0%	3
Issue 2		66.7%	2
Issue 3		33.3%	1
Issue 4		33.3%	1
	<i>answered question</i>		3
	<i>skipped question</i>		12

33. Please indicate the degree of urgency of the issues you listed in question 32				
	High	Medium	Low	Response Count
Issue 1	100.0% (2)	0.0% (0)	0.0% (0)	2
Issue 2	100.0% (1)	0.0% (0)	0.0% (0)	1
Issue 3	0.0% (0)	0.0% (0)	0.0% (0)	0
Issue 4	0.0% (0)	0.0% (0)	0.0% (0)	0
			<i>answered question</i>	2
			<i>skipped question</i>	13